Soybean Digest

Dannen's new unit at St. Joseph, Mo.

Official Publication

AMERICAN SOYBEAN ASSOCIATION

VOLUME 19 • NUMBER 8 • APRIL • 1959

Almost "in the cup" doesn't count!

SKELLYSOLVE FOR ANIMAL AND VEGETABLE OIL EXTRACTION

Applications

SKELLYSOLVE B. Making edible oils and meals from soybeans, corn germs, flaxseed, peanuts, cottonseed and the like. Closed cup flash point about —20°F.

SKELLYSOLVE C. Making both edible and inedible oils and meals, particularly where lower volatility than that of Skellysolve B is desired because of warm condenser water. Closed cup flash point about 13°F.

SKELLYSOLVE D. Quality solvent at competitive prices. For degreasing meat scraps, extracting oil-saturated fuller's earth, general extraction uses. Closed cup flash point about 3°F.

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SOLVENTS DIVISION, SKELLY OIL COMPANY
KANSAS CITY, MISSOURI

THE Soybean Digest

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IN THIS ISSUE

EDITOR'S DESK

Why Farm Production Goes Down

Intended planting acreages, as summarized in the Mar. 15 USDA reports, indicate a definite trend which has, in too many cases, gone unrecognized. The mere request for acreage by USDA does not bring it about. Farmers, in 1952, are going to grow 7 million acres fewer crops than requested. Food and feed supplies will apparently remain short of governmental askings. Some of the reasons are:

1—LABOR ON FARMS. Farm boys have been marched off to Korea and to stretches in the armed services too many times without regard for the effects upon food production. Neither soybeans nor corn nor wheat can be produced without men. Manpower has been drained off, farmers are planning to plant only that acreage they can properly handle with the help available. That means fewer acres, for there are fewer men.

Factory employment has also taken a slice out of available farm laborers. High wages, short hours, overtime, together with the stimulus of employment recruiting, have shrunk the available farm labor supply to the lowest level in generations.

In spite of new equipment, new methods, new varieties and new crops, labor is still a necessity. It is disappearing from our farms of the Midwest and the South. Food production is shrinking accordingly, will continue to shrink so long as factory employment and the Armed Services demand men. Since 1935 the farm labor supply has shrunk from an index of 100 to a level of 87.

2—FARM PRICES. The farmer today is being blamed for high prices. The city cousins have not recognized that while wages of the laboring man have continued upward, the returns to the farmer have shrunk. The general index of farm prices has declined from a level of 313 in February 1951 to 289 in February of 1952. During that same period the price of things bought by the farmer has continued to increase. Trucks, tractors, implements, farm wages—all have moved upward. In so doing they have shrunk the farmer's income still further.

In periods of plentiful and cheap labor farmers often increase production to hold their incomes to levels of previous years. In periods of labor shortages, such as at present, production goes downward. The parity ratio is now lower than at any time in recent years. Whether we like it or not, in plain language that means less food production.

3—GOVERNMENTAL PLANNING. Ceiling prices, continued sponsorship of wage increases in industry by the present administration, higher steel wages, higher steel prices, failure of price controllers to move on such major items as soybean oil meal and the dislocations which follow such bungling—all have contributed to an attitude of producing what the man on the farm can handle alone, putting the added acreage into grass crops—and telling the rest of the world to go hang. Attempted repeal of the laws of supply and demand has produced only chaos. Many farmers are disgusted, are restricting their operations until some semblance of order is restored by allowing natural forces to exert themselves.

But Seven States Are Left

New York last month joined the list of states which have enlightened legislatures and which have removed any restrictions and bans they had on sale of margarine. The Strong-Bauer Bill was passed by the House, and on the following day passed the Senate. Within a very few days it was signed by the Governor. On July 1 housewives in the state of New York will have the privilege of buying margarine in the form they want it, unrestricted by state government.

This leaves only seven states still retaining antiquated, provincial, outmoded legislative attempts to decide for the individual what and how he shall eat. Included are Iowa, Wisconsin, Minnesota, Vermont, South Dakota, Montana and Washington.

The margarine market is the second largest for soybean oil. With oil at present prices that market is highly important. Last year 55 percent of all oil going into margarine was soybean oil. Victories in states like New York, with 15 million consumers, are highly important. The impact will be felt during the last half of the year. Foods usage is, relatively speaking, higher priced usage. We must convince the other seven states that their housewives are capable of deciding for themselves what product they will use, without benefit of legislative direction.

There's a Big Market for Soy Oil

On this page in the March issue I carried an editorial titled "A Revolution in Paint." As a result of that article we were called upon by one of the nation's largest soybean processors, who are also refiners and processors of oil, to make a survey of the work being done in the field of soybean oil paints.

The story on page 17, titled "Do Latex Paints Threaten the Soybean Oil Market?" is a result of that invitation. So that we might give you a first-hand report on what this company is doing, Kent Pellett, our managing editor, personally visited the laboratories of the Archer-Daniels-Midland Co.

He found that all is not dark, as had been painted by some trade publications. Actually, there are some very definite advantages for soybean oil paints and surface coatings. We recommend this story for careful reading. We hope it is the first of a series of this type.

They're Making Reservations

Next month we will bring you a preliminary report on plans for the 1952 convention of the American Soybean Association. Dates have been selected as Sept. 9, 10 and 11. The site is Lafayette, Ind. Formal meetings will be held on the 9th and 10th. A big field day, in connection with the annual event sponsored by Purdue, will be held on the 11th.

Formal sessions will be held at the Purdue Union, and a limited number of housing accommodations will be available there. The two hotels and the motels and motor courts will also be utilized.

Put a big RED CIRCLE around the dates of Sept. 9, 10 and 11 now. Start making your plans to attend. Details will come next month. Reservations are already being made.

Are European Markets Lost?

By GEO. M. STRAYER
Editor Soybean Digest

High foreign material content on American soybeans received at European ports, plus low oil content as compared with competitive soybeans, have literally ruined our chances of continued export markets on this crop! For a period of three years I have repeatedly called attention to this high foreign material content, and have pointed out the necessity of cleaning up export beans if we were to hold our market. Look at the export figures from 1951-crop beans on page 29 and you can easily see what has happened.

Why? Because we have been too eager to dump our trashy beans on foreign buyers. Domestic processors have taken their pick of the crop, what was left has gone into export—and we expect our buyers to like it. When soybeans and other oilseed crops were scarce we could get away with it. Now that world supplies are more plentiful European buyers are turning elsewhere for their supplies. Price has not been the deciding factor. Quality has been the factor.

We have failed to supply the type of soybean which the market demanded. Competition has eliminated us. And it has had some help. Growers have been at fault for not cleaning up their crop as it was combined. Too much foreign material—trash, weed seeds, sticks and stems—have remained in the crop as marketed.

No Incentive from Present Grades

But under the present federal grading system there has been no incentive to market clean beans. The incentive has continued to be favorable to the man who marketed his crop just under the 3 percent allowable foreign material—he sold more pounds total and got more money. Sharing the blame with the grower are the men in the grain grading section, grain branch, PMA, Washington. They failed to heed the demand for a change in the grading standards. They listened to the grain handlers protecting their selfish interests and ignored the over-all benefits to the industry to be derived from proper grading standards.

There is another factor. I pointed it out to the director of the grain grading section upon my return from Europe. It became very evident to me as I saw cargoes of beans arriving and in storage, and as representative samples were compared with grading certificates as issued in this country.

Samples collected at port elevators as soybeans are loaded into ocean vessels do not correspond with analysis run upon arrival. Part of the trouble lies with differences in sampling. Part lies with differences in analysis methods. *But in my opinion part of the explanation also lies with faulty sampling by our inspectors at ocean ports.* A sample of soybeans taken with a pelican momentarily inserted in the loading stream as beans enter the hold of the ship quite apparently is not a representative sample. Light materials classified as foreign material, apparently do not remain in the pelican, but slough off. The sample which goes to the inspector is *not truly representative of the cargo being loaded.* It is my understanding that some studies on sampling methods are now being made by the grain grading section.

Need Better Sampling Job

An adequate and satisfactory sample taken at ocean loading should show foreign material as actually contained. It should not show more foreign material than contained—neither should it show less. The samples taken under the present sampling system seem to consistently show less than actual foreign material content. Our buyers have repeatedly protested. What have we done? Shipped them more of the same!

The table at the bottom of the page shows analysis of all factors of all cargoes or portions of cargoes arriving at ports in the Netherlands during November, December and January of 1951-52. Names of shippers have pur-

U. S. SOYBEANS ARRIVING AT NETHERLANDS PORTS, NOV.-DEC. 1951, JAN. 1952
All Cargoes Graded out of Export Port as U. S. No. 2

Steamer		Shipped Quantity	Grain Inspection Certificate		Splits			Damaged kernels & other grains			Foreign Material		
					U.S. Standard 20%			U.S. Standard 3%			U.S. Standard 3%		
Name	Arrival date	Kilos	Issued by:	Number	Insp. cert.	Comm. Gr.D.	Wageningen	Insp. cert.	Comm. Gr.D.	Wageningen	Insp. cert.	Comm. Gr.D.	Wageningen
					%	%	%	%	%	%	%	%	%
Stad Alkmaar	14.11.51	8.906.000	New Orleans Board of Trade	695/6/7	6	7.08	6.9		3.18	3.9	2.7	4.17	3.1
Aalsum	22.12.51	8.479.000	New Orleans Board of Trade	875	8	12.25	11.4		1.84	8.7	2.7	3.88	3.1
Leerdam	23.12.51	1.016.000	Baltimore Chamber of Comm.	38139	7	9.43	10.6	1	1.86	4.2	2.6	7.03	4.5
Arkeldijk	26.12.51	508.000	Baltimore Chamber of Comm.	38157	5			1.2			2.3		
Arkeldijk		2.032.000	Baltimore Chamber of Comm.	38158	7			1.4			2.7		
Arkeldijk		1.016.000	Baltimore Chamber of Comm.	38160	7			1.4			2.7		
Average: (s.s. "Arkeldijk")					6.71	10.43	9.4	1.37	2.14	4.8	2.64	4.11	2.6
Axeldijk	30.12.51	1.016.000	New Orleans Board of Trade	886	11	13.27	12.2	0.5	2.51	20.2	2.2	3.05	2.5
Blommersdijk	5. 1.52	1.016.000	Baltimore Chamber of Comm.	38177/8	11			1			2.5		
Blommersdijk		1.016.000	New York Produce Exchange	1954	4.5			0.9			2.4		
Blommersdijk		3.048.000	Baltimore Chamber of Comm.	38174	9			1.6			2.1		
Average: (s.s. "Blommersdijk")					8.49	11.67	11.2	1.12	3.12	9.5	2.23	4.43	2.5
Amsteldijk	11. 1.52	2.000.000	New York Produce Exchange	1960	8	9.80	11.3	2.2	3.09	9.6	2.3	4.32	3.8
Edam	23. 1.52	1.000.000	New York Produce Exchange	1961	9	14.18	14.4	1.6	1.76	14	2	5.39	4.9
Aalsdijk	17. 1.52	2.032.000	New Orleans Board of Trade	915	9	13.61	12.3		1.18	15.7	2.5	4.65	3.4
Am. Counselor	20. 1.52	3.404.000	Baltimore Chamber of Comm.	38271	9	11.98	12.7	1	1.44	5.4	2.8	4.12	2.4
Total		36.489.000			7.69	10.65	10.33	1.33	2.39	7.73	2.57	4.25	3.03

Committee of Grain Dealers at Rotterdam, official grain grading agency for Port of Rotterdam.
Government Experimental Institution for Seed Control at Wageningen (Holland).

A better job of sampling at our port elevators would remove one cause of friction in the export business. At present samples taken in this country do not correspond with those taken at European ports.

posely been omitted. Test weight was satisfactory in every case. Moisture percentage was in every case lower upon arrival than was shown on the grading certificate issued at export port. Higher percentages of splits are understandable, for the beans had been handled at least once more, and in some cases twice. For processing purposes the higher split bean percentages are not desirable, but they are not an important factor.

Damaged beans are an important factor. Percentages shown upon arrival are consistently higher than the figures given at loading. Apparently we need some study on proper sampling to reflect this factor.

But far more important is foreign material. This factor, together with low oil content of soybeans shipped from areas close to export ports, is responsible for our loss of markets. Only a small fraction of last year's bushelages have been leaving our shores from the current crop. To date there have been some 18 million bushels of Manchurian soybeans entering European ports since harvesting the 1951 crop. They have not moved at cheaper prices.

Dutch Have Left Us

Our failure to supply soybeans of reasonable oil content and reliable foreign material content has cost us our markets. The Dutch, who have been among our most loyal customers, will see the arrival of their first cargo of Manchurian beans in April. Other cargoes will follow. WHEN ARE WE GOING TO LEARN OUR LESSON? When will we wake up and start supplying what the market demands? And running reliable samplings, fair to buyer and seller? If we are to have any export market we must awaken now!

I am not naive enough to think that our sampling and grading systems are always wrong, and that figures submitted by buyers are always right. I am convinced that our export sampling system needs study and improvement, and that it is responsible for much of the constant dissatisfaction with grading certificates as issued on ocean cargoes. I am convinced that we must revise our grading standards in order that they may be more fair to the careful growers as well as to the buyer.

I am further convinced that with our mechanical production methods we can, over a period of years, compete on a price basis with other countries exporting soybeans. Our man-hour load is far less than other countries; we have the varieties, the know-how and the experience to compete with anyone. But until we throw out our low-oil-content varieties, until we stop exporting junky high-foreign-material soybeans, until we start giving true samplings and thus representative analysis certificates, we have succeeded in turning our markets over to competition.

We have been the best sales representatives our friends on the other side of the Iron Curtain could ask for. Are we going to wait until our very last customer has deserted us? What does it take to convince us? Germany—our biggest customer—has left us. Now the Dutch leave us for other sources of supply. Is it not time for action?

GROWERS

Fertilizer Ups Yield

Soybean yields were increased as much as 60 percent by fertilization in 1950 and 1951, it is reported by the Blytheville, Ark., Courier-News. In the 1951 experiments conducted at the Rice Branch Experiment Station near Stuttgart by Dr. R. L. Beacher of the University of Arkansas, yields of S-100 beans were increased from 16.5 bushels per acre to more than 27 bushels per acre by the application of phosphorus and potassium. Similar outstanding results were obtained in the 1950 experiments on outlying rice farms.

The common practice in growing soybeans in Arkansas as in most other states is to apply fertilizer to other crops in the rotation but not to the soybean crop. Instead, farmers could materially increase their returns by determining the needs of their soils through a soil test and then applying a fertilizer to meet those needs, Dr. Beacher states.

The soils at the Rice Branch Station, in common with most rice soils in the Grand Prairie, are very low in phosphorus and potassium. Tests made of soils in 414 fields in the area, representing more than 14,000 acres, have shown that 63 percent of the fields are very low in phosphorus and 71 percent are very low in potassium, Dr. Beacher points out. Accordingly, in his research, he applied superphosphate and muriate of potash to soybean plots at varying rates, singly and together.

The highest yield in 1951, of 27.7 bushels per acre, was obtained from the plot receiving 400 pounds of 20 percent superphosphate and 80 pounds of 50 percent muriate of potash. The same amount of superphosphate and 160 pounds of muriate of potash gave a slightly lower yield, of 26.9 bushels. These represented increases of 11.2 and 10.4 bushels per acre, respectively, over yields on the check plots which received no fertilizer. Adding nitrogen, with or without a trace of minor essential elements, did not increase yields.

In this test all applications were made as side dressings, 6 inches to each side of the row and 3 inches deep, when the plants were 7 inches high.

In discussing these results, Dr. Beacher warns that they would not apply on all soils on which soybeans are grown. They do show, however, that fertilization of the soybean crop may be a profitable step, he points out. Growers should determine the needs of their soils through a soil test, and then fertilize accordingly.

Hale Variety High

The variety Hale Ogden 2 made the highest yield in 1951 and also the highest four-year average yield in tests at the Hale Seed Farms, Burdette, Ark., George Hale reports.

The 1951 yield for Hale Ogden 2 was 32 bushels per acre. The four-year average yield was 38.9 bushels.

Dortchsoy 2 was second with a 1951 yield of 26 bushels and a four-year average of 34.6 bushels.

The yield of Ogden in 1951 was 28.9 bushels, higher than Dortchsoy 2, but the four-year average was slightly lower.

Missouri Contest

Wesley Attig, New London, was winner of the northeast Missouri soybean achievement program that is sponsored by the MFA Cooperative Grain & Feed Co. of Mexico, Mo.

Attig had a yield of 45.16 bushels to the acre and a total of 115.16 points. Entrants came from seven northeast Missouri counties.

Attig limed his field in 1950 and used 150 pounds per acre of 8-24-8 fertilizer in the row with his corn. He plowed down another 100 pounds of 8-24-8 before planting the field to soybeans in 1951. He used the variety, Chief, inoculated the seed, cultivated enough to keep the field practically free of weeds, and saw that the combine was carefully adjusted to prevent loss of beans at harvest time.

The next four places in Class A were won by James E. Shaw, Vandalia; Elmer Mollett, Mexico; Dean E. Perry, Laddonia; and Ralph E. Lierkheimer, Rush Hill.

The winner in the Junior Farmer Class was Douglas Erdle of Laddonia.

RESULTS OF HALE SEED FARMS, Burdette (Miss. Co.), Ark., SOYBEAN VARIETY TEST—1948-49-50-51 and 4-Year Average

VARIETY	Bushels Per Acre				
	1948	1949	1950	1951	4-Yr. Ave.
Hale Ogden 2	47.7	38.5	37.2	32.0	38.9
Dortchsoy 2	39.2	37.3	35.8	26.0	34.6
Ogden	40.2	33.1	34.7	28.9	34.3
Dortchsoy 67	—	—	39.1	22.3	—
S-100	—	—	35.0	14.5	—

Mann Wins in Ark.

Cecil Mann was named winner of the fifth annual Mississippi County, Ark., soybean yield contest sponsored by the Blytheville, Ark., Junior Chamber of Commerce.

The Jaycees presented Mann with the Ed Critz trophy at a banquet in February. His yield was 45.9 bushels of soybeans per acre. Mann had won the contest once previously.

Second place winner was H. C. Weathers, Jr., with a yield of 41.7 bushels per acre and third place went to Raymond Whittle, who produced 40.1 bushels per acre.

Nebraska Varieties

For a report on varieties adapted to Nebraska, with variety recommendations for the different sections, see Outstate Testing Circular 21, "Performance of Soybean Varieties in Nebraska, 1948-1951," by A. F. Dreier, D. G. Hanway and R. S. Matlock.

You can obtain a copy from the Agricultural Experiment Station, Lincoln, Nebr.

New Product Equals Antibiotics

A first report from a test comparing a fatty acid derivative with an antibiotic indicates that the chemical is at least equal to the drug in putting weight on hogs, Armour and Co., Chicago, has announced.

The test work was done by a team of researchers at Michigan State College Agricultural Experiment Station, East Lansing, Mich., composed of R. W. Luecke, J. A. Hoefer and Frank Thorp, Jr., using a chemical supplied by Armour.

The chemical is an ethomid, trade name for a series of non-ionic surface active agents manufactured from fatty acids and used hitherto as detergents and emulsifiers. It was compared with aureomycin.

Four groups of young Yorkshire hogs were used, the Michigan group reported. To one was fed a standard ration of corn, meat and bone scraps, soy meal, minerals and vitamins. To the second they fed the standard ration plus small amounts of ethomid. The third got the ration plus aureomycin. The fourth got the ration plus both ethomid and aureomycin.

The first group gained 1.1 pounds a day per hog. The ethomid and the aureomycin groups both gained 1.29 pounds a day, while the combined fourth group averaged somewhere in between. The workers found that, while the gain from aureomycin was manifested immediately and then leveled off, the gain from the ethomid was slow in starting, but then rose rapidly and, as the experiment continued, continued to climb.

From the standpoint of the hog-raiser, the importance of the demonstration lies in the fact that the Armour chemical can be fed at much lower cost than the antibiotic.

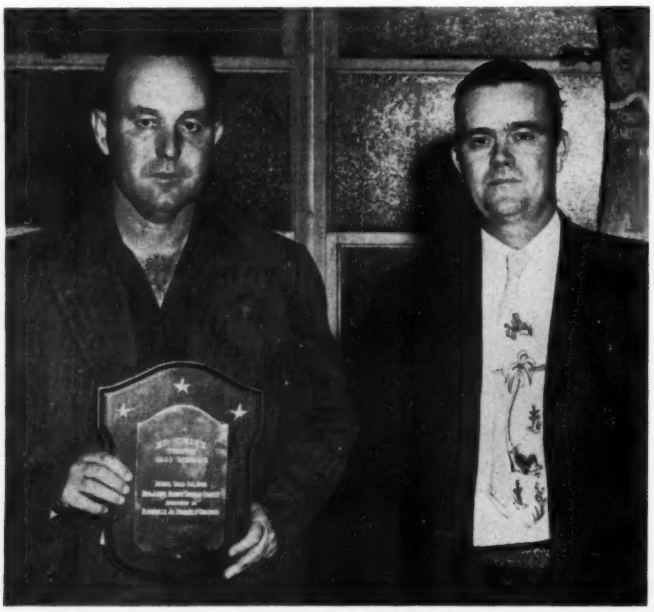
Most hogs are marketed at ages of from six to eight months when their weight ranges from 200 to 275 pounds, depending on the quality of their diet and general care.

The fact that antibiotics in the diet will increase the weight gain of swine was published a year or so ago and the drugs are now being fed to the animals by many farmers. It was believed that they worked by inhibiting "unfavorable" bacteria in the intestinal tract and permitting the growth of "favorable" organisms.

However, a physical chemist then pointed out that all the antibiotics used were surface active or "wetting" agents, which "make water wetter," as in detergents, and permit more effective absorption. That opened the question whether the reduction of surface tension rather than germ-killing was the important property, and a number of experiments were begun to answer it.

The Michigan state group set up one of these tests in cooperation with Armour research chemists and animal nutrition experts, using Armour's Ethomid C/15.

Armour chemists regard the Michigan State test only as a beginning which opens up a new idea in nutrition. The bactericidal theory seems questionable now but a number of other feeding studies with surfactants already in progress have so far pro-



Cecil Mann, left, winner of the Mississippi County, Ark., soybean yield contest, and Raymond Whittle, third place winner. The contest was sponsored by the Blytheville Junior Chamber of Commerce.

FEEDING

duced no definite explanation of how the chemical works. It is suspected that rather than killing germs, it makes the food more readily assimilable by reducing its surface tension.

Synthetic Methionine

The ideal chick diet would be one that supplied all of the essential amino acids in just the right proportions, states H. R. Bird of the U. S. Department of Agriculture in Poultry Tribune. Such a diet is not easy to devise from the usual feedstuffs. However, several such diets come close to the ideal proportions and can be brought even closer by addition of a small quantity of a synthetic amino acid.

A chick diet composed largely of yellow corn and cottonseed meal, with a small amount of alfalfa meal, mineral, and vitamin supplements contains too little lysine, but enough of all the other essential amino acids and no large excess of any.

The lysine deficiency results in slow growth of chicks and the appearance of white feathers in breeds that normally have colored feathers.

But don't rush off to your feed dealer to buy some synthetic lysine. Although it can be made on a large scale, the price is still too high for commercial use in feeds.

If we use soybean meal instead of cottonseed meal in a chick diet that otherwise contains grains, alfalfa meal, mineral, and vitamin supplements, lysine and all the other amino acids except one are supplied in adequate amounts. There is a slight deficiency of methionine. It has been demonstrated recently at Beltsville that growth of chickens fed such a diet is stimulated by addition of 0.05 to 0.075 percent of synthetic DL-methionine, but not by other amino acids. Higher levels of methionine were more effective.

A Coming Product

Fortunately, methionine is one of the few amino acids of which both the D- and L- forms can be utilized by the chicken. Fortunately also, it is being synthesized on a large scale at a cost of about $3 a pound. At this figure, methionine used as 0.05 percent of the diet adds $3 to the cost of a ton of mash.

The feed industry has shown interest in methionine at this price, but thus far very little of it has been used in commercial feeds. This is partly because its effects are less dramatic than the effects of antibiotics and vitamin B-12. The latter produce an improvement in growth that can be seen by anyone that looks at the chickens. The effect of methionine may not be detected by the naked eye, but it shows up in the records and can be measured in dollars and cents.

Improves Growth

In recent experiments at the Connecticut Agricultural Experiment Station, the laboratory of E. I. DuPont de Nemours and Co., and the Agricultural Research Center at Beltsville, methionine improved the growth rate and efficiency when added to diets containing 0, 2½, or 5 percent of fish meal. Soybean meal was the principal source of protein in all the diets. Although fish meal contains considerably more methionine than soybean meal, it does not supply enough when fed as 5 percent of the diet. When the basal diet contained 2.5 percent of fish meal, the addition of one pound of methionine per ton of feed increased average weight at 10 weeks by 1.8 percent and decreased the number of pounds of feed required to produce a pound of gain by 4.6 percent.

Calculated in dollars and cents on the basis of a broiler price of 30 cents a pound and feed price of $104 a ton, the synthetic methionine added to the feed was worth $7.50 a pound. The actual price of $3 a pound does not appear excessive in the light of these results.

Methionine probably will be the first of several synthetic amino acids that will find their way into commercial feeds. This new development will make it easier to regulate the amino acid content and protein quality of feeds. It will be another step toward feeds that are really tailor-made for the intended purpose.

Guide to Protein Cost

A handy guide for figuring the cost per pound of protein in dairy feeds is now available free from the University of Illinois College of Agriculture.

This guide, prepared by the department of dairy science, lists 17 high-protein feeds commonly used by dairy farmers. The cost per pound of protein is given for each of these feeds when they're priced anywhere from $80 to $136 per ton. Just by picking the present price of any feed, you can find the cost per pound of protein in that feed.

Suppose you buy a 44-percent protein soybean oil meal and pay $99 per ton for the meal. The protein would cost 11.2 cents per pound.

With this free chart, you can see at a glance where you're getting your best protein buy.

Write for your copy to the dairy science department, College of Agriculture, Urbana, Ill.

THE COVER PICTURE

Dannen Grain & Milling Co., one of Missouri's leading processors at St. Joseph, Mo., has just added a new processing unit that brings the total crushing capacity of the firm to between 12,000 and 13,000 bushels of soybeans daily.

In the foreground you see the new Rotocel plant of Blaw-Knox Construction Co. that went into production in mid-February.

Just behind the Rotocel is Dannen's Anderson solvent unit. Farther in the background is a press plant, and beyond that can be seen the storage elevators.

The three plants give Dannen the capacity for handling a large volume of beans. The Rotocel has a capacity of 150 tons a day, which, with the Anderson unit, make 250 tons per day in the solvent plant. The press plant has six French cooker-type screw presses with a daily capacity of 120 tons.

The concrete elevator has a storage capacity of slightly over a million bushels. Other storage at the plant brings the firm's storage at St. Joseph to 1,200,000 bushels. In addition, Dannen has storage for almost a million bushels of beans at branches in Iowa, Missouri and Nebraska.

H. L. Dannen is president of the firm; Dwight L. Dannen, vice president.

—s b d—

NEW CIRCULATION HEAD

DELMAR COBIE

There will be a new name henceforth on the subscription letters you receive from the Soybean Digest.

Delmar C. Cobie became our new director of circulation in late March, succeeding Gene Taylor. Gene, who had been with the Digest since 1946, resigned to become secretary-treasurer of the Taylor & Isenhower Construction Co., a family partnership at Hudson, Iowa.

Cobie, an experienced magazine circulation man, comes from Denver, Colo., where he was associated with Western Farm Life Publishing Co. since 1949. He was first assistant circulation manager then assistant business manager.

Cobie is a graduate of the College of Commerce and Finance of Drake University. He was with the U. S. Army Air Corps during World War II, most of the time as an instructor in an airplane mechanics school.

He is married and has one eight-year-old daughter.

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Ohio Experiments on the Chemical Control of Weeds

You can't depend on the weather cooperating to give effective weed control in most of the soybean belt, and fields like this one are common many seasons. Perhaps weedicides are the answer, if one or more can be found that will kill weeds and not cut soybean yields too badly. Work is in progress on this problem at the Ohio and other experiment stations.

A large number of pre-emergence herbicides have been tested at the Ohio Experiment Station. One gave fairly satisfactory results. Others require further testing before they can be recommended.

By C. J. WILLARD*

Professor of Agronomy, Ohio State University. Given before Conference of Processors and Agronomists, Purdue University.

THE OHIO Agricultural Experiment Station has conducted tests on the chemical control of weeds in soybeans at the Ohio State University since 1948, treating a total of nearly 2,000 plots in that time.

Most of the herbicides currently recommended for weed control in soybeans have been included in this program. Our tests have been on beans drilled solid, since many Ohio beans are planted in that way, and we felt that anything which is practical for beans drilled solid can readily be applied to beans in cultivated rows.

The treated plots have been 10 rows wide and 20 to 25 feet long. Yields of threshed beans have been taken in many, but not all, of the experiments. Notes have been taken on all experiments as to the effect of the herbicides on soybeans, the grass weeds, and the broadleaved weeds, separately. These notes have been taken on a scale of 0 to 10, 0 meaning no effect; 10, all plants killed, and the intervening numbers, intermediate conditions between those two extremes.

A mixture of rape and German millet has been sown at the same time the soybeans were sown, in order to insure that a uniform broadleafed plant and a uniform grass plant would be present on all plots. Notes have been taken on the natural weed infestations, as well.

All herbicides tried have been applied pre-emergence except for 2,4-D in 1948 and 2,4-dichlorophenoxyethyl sulphate in 1949. A special sprayer (Agronomy Journal, 42:158-160, Mar. 1950) was used to make these applications, giving great speed and accuracy in the applications.

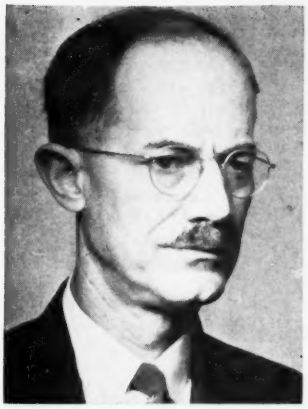
To discuss the post-emergence applications first, 2,4-dichlorophenoxyethyl sulphate (E.H. No. 1) did not injure soybeans, but gave no significant weed control, because the weeds had germinated when it was applied, and E.H. No. 1 is valuable only pre-emergence.

Our tests, like those of everyone else, showed soybeans too sensitive to 2,4-D for any possible use of it post-emergence. Rates of from one-forty-eighth pound per acre to one-half pound per acre were applied at three stages of growth from two true leaves to first flowers. Significant losses in yields of soybeans were recorded at one-fourth and one-half pound, the latter cutting the yield by nearly two-thirds. There are no important weeds in the Cornbelt which are more sensitive to 2,4-D than soybeans.

We have used 2,4-D pre-emergence in a great variety of ways, alone and in combination with several other herbicides. Under the right weather conditions, 2,4-D can give results which are absolutely ideal, so that you want to tell the world that here is the answer to your soybean weed problems.

However, if rain comes between the time of applying the 2,4-D and the germination of the soybeans, the beans will be severely damaged or even completely killed. In view of our uncertain Cornbelt weather we would not recommend the use of 2,4-D pre-emergence on soybeans, despite the fact that if the weather is fa-

*Most of the field work in these experiments was done by Dr. Warren C. Shaw in 1948, William F. Megritt in 1949 and 1950, and Gideon D. Hill and Evert O. Burt in 1951.



C. J. WILLARD

vorable, better results can be obtained from 2,4-D than almost any other herbicide.

If you should take a chance, the alkyl esters of 2,4-D are much safer than the amine salts at corresponding rates. Harrowing before treatment, to prevent rainfall channeling the herbicide directly to the beans, helps noticeably with any pre-emergence herbicide on soybeans. MCP gave no evidence of being better than 2,4-D.

Rainfall Variations

In 1948 and following, some excellent, at times almost perfect, weed control results were obtained with pentachlorophenol in oil applied pre-emergence at rates ranging from four to twenty pounds per acre (active ingredient) and at other times, both damage to soybeans and failure to control weeds were observed. These differences were considerably related to differences in rainfall immediately after application, heavy rains resulting in damage to soybeans, and with severe drouth, there was sometimes failure to control weeds.

Two formulations were used, one of PCP dissolved in aromatic oil, the other dissolved in ordinary fuel oil for application. At no time in the four years' experiments has there been any difference between these two formulations. Because of its extreme sensitiveness to weather conditions, we do not feel that PCP can be recommended for pre-emergence treatment of soybeans.

Sodium pentachlorophenate gave results which were very similar to PCP, phenol, giving serious damage to soybeans in wet seasons, good results in ideal seasons.

Most Satisfactory

The most uniformly satisfactory pre-emergence herbicide for soybeans in our four years' work has been the triethanolamine salt of dinitro ortho secondary butyl phenol, sold by the Dow Chemical Co. as "Premerge." This has given some damage to soybeans in wet seasons, but has not, in our experiments, reduced the yield of threshed beans at any time. Applications in the range of five to ten pounds active ingredient per acre have been successful, with six to seven pounds a good average.

DNOSBP can be applied more safely and effectively if the field is cultipacked or harrowed after planting. If it were used on rowed soybeans, a considerable economy of application could be achieved by applying it only over the row. To do this accurately would, of course, require that the soil be rolled or otherwise smoothed back of the drill or planter, and the DNOSBP applied at the time of planting, as is being done for cotton. We have had better results from waiting a day or two after planting before applying DNOSBP, but the difference is not sufficient to set that up as a requirement.

Xanthogen disulfide (Sulfasan) is a contact herbicide. When used on early-planted soybeans, when the weeds germinated faster than the soybeans, it killed the weeds that were up before the soybeans came through, and was reasonably effective. Under no other conditions has it been of value.

Various formulations of IPC have been used, none of them with much satisfaction, though occasionally there has been reasonably good grass control. We made some extensive tests of mixtures of IPC and 2,4-D, following the work of Templeman in England, but they were not satisfactory. This has recently been shown to be due to the rapid breakdown of IPC under our soil temperatures.

Sodium 3,6-endoxohexahydrophthalate (E.C. 3740, Endothal) gave some fairly promising results, but will have to be evaluated further before it can be recommended. We tried mixtures of Endothal and 2,4-D, which gave good results, but under conditions in which the isopropyl ester of 2,4-D alone gave equally good results.

Sodium trichloroacetate and dichloral urea (E.H. No. 2) were excessively toxic to soybeans, as little as four pounds to the acre of either reducing the yield of soybeans to about one-fifth of the check yields.

CMU was used at one-fourth to two pounds per acre last year, and caused definite early damage to soybeans at two pounds per acre. Conditions were not favorable for making a good rating on weed control, although there was some control. The treated soybeans outgrew the injury and yielded as much as the checks. The desirability of CMU for this sort of use will depend first of all on whether it tends to accumulate in the soil, as now seems possible.

Chloro-IPC was also used for the first time last year, and should definitely be tried further. It cannot be recommended as yet.

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VEGETABLE DIET CAN BE ADEQUATE

"Both the vegetarian type and the carnivorous type of diet can adequately feed mankind," Dr. Robert S. Harris of Massachusetts Institute of Technology, Cambridge, Mass., declared at the International Conference on Vitamins held in Havana, Cuba, as reported by Science News Letter.

There is not enough land in the world to feed all mankind on a meat and milk type of diet. But people can be well-nourished on a diet that is rich in cereals, such as wheat, corn and rice, and in legumes, or beans, and other vegetables and fruits.

Dr. Harris fears that "considerable harm" has been done by shipping an excellent food, such as milk, into undeveloped areas for use in school lunch programs and telling children and their parents that milk and other foods of animal origin are necessary for their nourishment.

"It does not matter," Dr. Harris stated, "whether the calcium comes from milk or tortilla, whether the iron comes from meat or tampala, whether the niacin comes from liver or peanuts, whether the tryptophane comes from the eggs or soybeans, or whether the calories come from wheat or rice, so long as these nutrients are available."

The soybean breeding nursery at the Central Experimental Farm, Ottawa.

Soybean Improvement at Ottawa

By F. DIMMOCK

● *Dr. Dimmock is with the division of forage plants at the Central Experimental Farm, Ottawa, Ontario, Canada. From a talk before the second Ontario soybean convention.*

THE SOYBEAN breeding program which was begun in 1929 at the Central Experimental Farm, Ottawa, Ontario, Canada, has resulted in the development and release of four varieties, namely Pagoda, Kabott, Capital and Mandarin (Ottawa strain). These varieties have had a wide distribution, not only in Canada, but also in certain areas of the United States where they have been highly recommended.

The breeding program is much broader in its application and scope than may at first be realized, as there is only one other experiment station engaged in soybean breeding work in Canada. It is located at Harrow, Ontario. The two stations share the responsibility of developing varieties for all areas throughout the Dominion to which soybeans may be adapted for production.

Thus the program at Ottawa resolves itself into one in which the very earliest and the very latest material that can be produced on the Station must be included in the breeding work. All available sources have been tapped for any such material that may prove of value and new material is constantly being received through various official channels set up for the purpose.

The main emphasis at present is being placed on a rather extensive program of hybridization between selected varieties and strains. Varieties such as Manitoba Brown, Pagoda, Capital, Mandarin (Ottawa), O.A.C. No. 211 and A.K. (Harrow) have been used in hybridization. Progenies from these hybrids are in various stages of development at the present time. Results have indicated that improvement may be expected from this source and several selections are now undergoing final test in order to decide whether they merit naming as new varieties.

Need Early Variety

We are particularly interested in securing an early, productive variety for eastern Ontario. This variety in addition to satisfactory yield and maturity must possess such desirable agronomic characters as suitable growth habit, resistance to lodging and disease. The chemical composition of the seed must also meet the desired requirements. At present, this means high oil content, rather than high protein, although this emphasis may have to be changed or modified somewhat according to needs.

In addition to the large number of progenies from hybrids between varieties selected from among those commonly grown in Canada, we have been fortunate in obtaining a collection of progeny material in various stages of development through the excellent cooperation of the U. S. Regional Soybean Laboratory, Urbana, Ill. This material comprises bulk progenies from hybrids among the following varieties: Flambeau, Mandarin, Capital, Blackhawk, Hawkeye, Lincoln, Mukden and Richland. It has been grown at Ottawa for two years and selected progenies are now being included in the nursery under pedigree.

A number of progenies looked very promising during the past season and chemical analysis indicates variation in oil content from 17 to 23 percent, while protein content varied from 31 to 45 percent. This provides ample scope for selection on either a protein or oil basis and both constituents will receive attention in the development program.

During the past few years, more and more attention has been directed towards disease resistance. A number of diseases affecting soybeans have become rather prevalent throughout the soybean growing area in Canada, although no outbreaks of a serious nature have been observed at Ottawa. However, in the main areas of production, disease is becoming a factor of importance and certain varieties have been found to be much more susceptible than others. Some of the most productive varieties now in use have been found to be among the most susceptible to the more serious diseases affecting the crop.

It is obvious that these high-yielding varieties may be desirable to use

in the breeding program, in the hope that their hybridization with resistant varieties may give rise to high-yielding progenies possessing disease resistant qualities. In using such combinations in our breeding program at Ottawa, the practice will be to test selected progenies widely and thoroughly before any move is made to designate them as varieties and release them into commercial channels for general distribution.

Disease Studies

Disease studies, therefore, have become an important phase of our breeding program, in spite of the fact that we have not yet been invaded by the serious diseases at Ottawa. This does not mean that we have been entirely free from disease, for mosaic and leaf spot seem to have been with us right from the beginning.

In the breeding for high yield of seed of high oil content, we have been singularly successful in combining both in the variety Capital. This variety is also highly satisfactory with respect to maturity. During the past five years (1946-1950) data from 52 U. S. Regional, Zone 0, Uniform Tests show the following results for Capital in comparison with Mandarin (Ottawa) and Flambeau.

Capital resulted from a cross between A. K. (Harrow) and Selection 171, the latter being a strain selected at Ottawa from a mixture of Manchurian origin.

AVERAGE 5 YEARS, 52 TESTS

Variety	Oil content	Relative position		
	%	1st	2nd	3rd
Capital	20.3	47	5	0 (52)
Mandarin (Ottawa)	19.5	4	24	24 "
Flambeau	19.4	4	23	25 "

AVERAGE 5 YEARS, 54 TESTS

Variety	Average yield	Relative position		
	bu.	1st	2nd	3rd
Capital	27.6	27	18	9 (54)
Mandarin (Ottawa)	27.0	21	27	6 "
Flambeau	24.4	7	9	38 "

Mandarin (Ottawa) has been among the leading early maturing varieties for many years. It has a wide adaptation and has performed consistently well in a great many areas. Its outstanding characters, in addition to early maturity, are satisfactory yield, unusual resistance to lodging and, so far, high resistance to disease. It has proven a very satisfactory variety for crossing with selected varieties of later maturity.

In addition to the breeding program, a number of investigations are in progress at Ottawa. I shall mention just one which should be of considerable interest to growers. During the past two years we have conducted a date-of-planting test to study the influence upon yield and composition of the seed. The first year we used only the variety, Capital, in this study, but in the second year (1951) we included Mandarin also. The following tables present briefly a summary of the data which has been obtained:

Table 1. **INFLUENCE OF DATE OF PLANTING ON YIELD (1951)**

Date Planted	Capital				Mandarin			
	Yield		1000 Seed wt.		Yield		1000 Seed wt.	
	bu.	%	g.	%	bu.	%	g.	%
May 18	36.3	100	125	100	35.2	100	197	100
May 25	30.6	84	136	109	31.0	88	220	112
June 2	28.9	80	139	111	27.2	77	211	107
June 9	20.6	57	109	87	16.8	48	195	99
June 16	17.8	49	109	87	10.0	28	181	92

Table 2. **INFLUENCE OF DATE OF PLANTING ON YIELD AND COMPOSITION OF THE SEED (1950)**

Date Planted	Capital				
	Yield		Protein	Oil	Iodine No.
	bu.	%	%	%	%
May 20	41.5	100	40.0	18.6	138
May 27	38.8	93	39.0	18.3	139
June 3	34.4	83	41.6	17.2	139
June 10	27.1	65	40.3	15.7	142
June 17	16.9	41	43.7	15.6	141

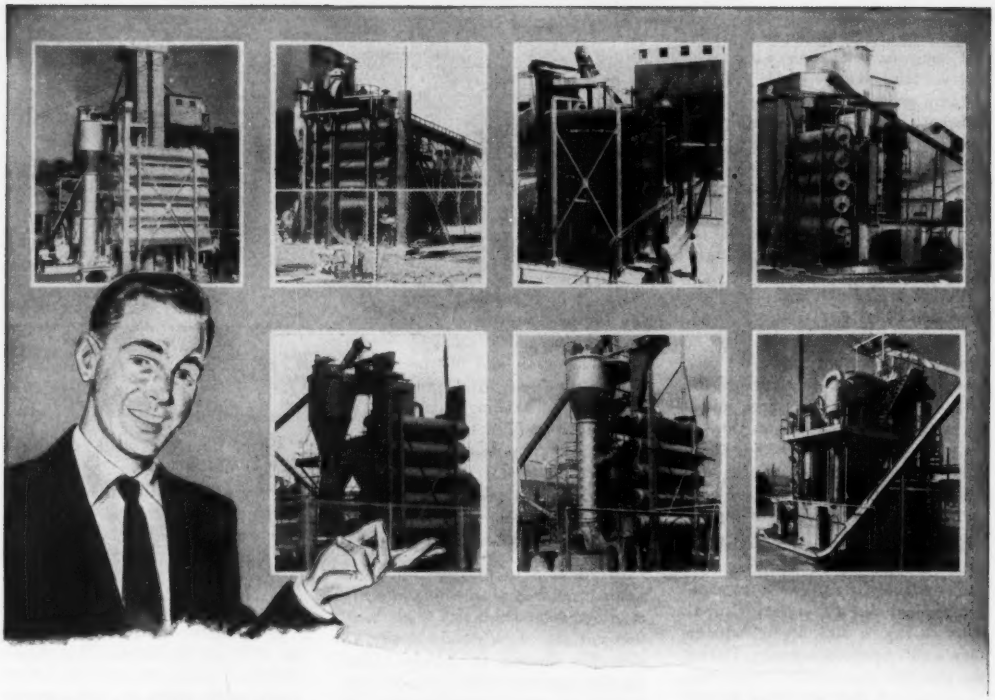
Tables 1 and 2 both show the marked influence which the date of planting has on the yield and the composition of the seed. While these data are preliminary, nevertheless the trend insofar as yield is concerned is the same in both years and for both varieties.

The data on the 1,000 seeds weight for 1951 are of interest. They do not entirely follow the same downward trend as the yields do, and comparison between the first and the last plantings do not show nearly the same amount of reduction as occurred in the yields. Actually the beans harvested from the second and third plantings weighed heavier than from the first, and even those from the fourth and fifth plantings were only slightly reduced in weight. This indicates that there must have been a marked reduction in the quantity or number of beans harvested from the delayed plantings. Fewer pods and seeds developed with each delay in the date of planting. This then was the important influence which resulted from delayed planting—a continuous reduction in the number of beans produced and a consequent progressive reduction in yield per acre.

The effect of date of planting on composition of the seed, shown in Table 2, indicates a consistent reduction in the percentage of oil as seeding was delayed.

If anything is to be gained from this study, it is that growers are well advised to plant soybeans early if the best results are to be achieved both from the standpoint of bushels per acre and percentage of oil content of the seed.

This shows the differences in maturity between strains in the soybean nursery at the Central Experimental Farm, Ottawa.



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This new soybean oil flat paint is superior in covering qualities.

Do Latex Paints Threaten Market for Soybean Oil?

"No!" says world's largest processor for the paint industry.

By KENT PELLETT

ARE SYNTHETIC rubber or latex base paints about to take over the interior paint field, and thus close one big market for soybean oil?

The way this type of paint has come to the fore in recent months is nothing short of sensational, until even some men in the paint industry have begun to wonder if the conventional oil base paints may not be on their way out so far as interior use is concerned.

Recent articles in Time Magazine and in the Wall Street Journal have contributed to this impression. The Soybean Digest carried an editorial in the February issue pointing out the possibility that increasing use of latex paints may cut down materially on the volume of soybean oil being used in interior paints.

But as soon as the editorial appeared it was challenged by the world's largest processor of chemically modified soybean oils for the paint and varnish industry. Representatives of Archer-Daniels-Midland Co. challenged it on two counts:

1—They doubt if latex will make as big a splash in the paint field for the long pull as many people now believe, even though this type of paint has doubtless come to stay.

2—They question whether latex, though it may find wide usage, will displace soybean oil to a large extent. Modified soybean oil and other conventional oil based paints are much more versatile in their application. They have a wider range of usage than the latex paints. *And in addition, many of the latex paints contain soybean or some other vegetable oil.*

They said they saw no reason why soybean oil will not continue its present healthy growth in the paint industry, which has already carried it to the place where it amounts to 25 percent of the total oil required by the paint industry.

Archer-Daniels-Midland Co. invited us to go to their research laboratory in Minneapolis and see for ourselves. They asked us to see the tests they had made on interior paints, both oil and latex. And they wanted us to see some of the newer paints made with modified soybean oil, some of which were quite remarkable, they assured us.

Firsthand Information

I accepted the invitation and have just spent a day at the ADM research laboratory with James C. Konen, research director; W. G. Andrews, director of special oil sales; Stan Thompson, manager oil technical service; Floyd Nelson and Robert Jerabek of the research staff, and others. There in a large converted school building the firm is carrying on an amazing variety of research in the many fields in which it is engaged. These range from flour to livestock feeds to paints. And ADM goes further afield with its soy products that enter into foods, paper coatings, plywood adhesives, brew flakes and core oils, to name a few.

The men at ADM reminded me of what Soybean Digest has been telling its readers for years, that soybean is the most versatile of all oils—and this goes for paint as well as other products.

Crude soybean oil is too slow drying to be a good paint oil and only

Oil paints are applied readily with a roller.

a small amount of this semi-drying oil is now being used in paints. But modified soybean oils such as are produced by Archer-Daniels-Midland Co. and other firms are something else.

They are entering into every conceivable kind of paint, varnish and lacquer, both interior and exterior. Quality flats and enamels, both gloss and semi-gloss, and undercoats can utilize soybean oil. And it enters into latex paints. In each case it produces superior products. Each is tailored for a specific purpose.

"Technically," says Andrews, "it is possible to make any oil-based paint product or coating on the market from soybean oil and existing chemicals. When soybean oil has to hunt other markets it will be because other drying oils are under-selling it, not because they are better."

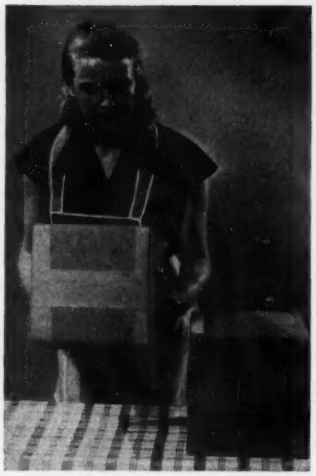
Andrews pointed out as an example that Ardol, a chemically modified soybean oil and an ADM product, can be successfully used as a substitute for linseed oil in outside paints. But the treatment to make soybean oil a superior vehicle for outside paints costs approximately 5 cents a pound. Thus crude soybean oil should sell for several cents a pound under linseed to make it competitive with linseed. But don't sell soybean oil short. It has many characteristics that other drying oils don't have.

What Latex Is

What is this latex base paint that has captured the imagination of the paint industry and home owners as well? It is one of a long line of water emulsifiable paints that have been on the market for years. It undoubtedly has outstanding qualities. It is much faster drying than oil base paints, and is probably the most durable water paint that has yet appeared on the market.

The latex product being used in paint is made in the same type of plants that produced synthetic rubber for tires during World War II. Synthetic rubber is made from styrene and butadiene. When natural rubber again became available from the Pacific after the war and the usage of synthetic in tires fell to about 10 percent of its wartime volume, the chemical companies began to cast about for a new outlet for their product. The paint field was one answer.

The latex product that goes into water paints is generally made from



Testing for odor. Inside of boxes were painted then sealed. Girl sniffs odors coming through pencil hole in top to compare paints. Now soybean oil flat paint is odorless.

styrene and butadiene, the same ingredients as are used in synthetic rubber. But because the proportions are different the characteristics of the resulting products are different. Synthetic rubber as used in automotive tires is pliable and elastic while the latex used in water paints produces a hard, resin-like surface.

This latex has some obvious advantages in the paint field, but some are more theoretical than actual.

Has Handicaps

Latex is theoretically completely unsaponifiable. If this quality could be carried over into the finished product, it would be of tremendous importance as such a paint would then not be affected at all by soap or washing. However, the introduction of water soluble emulsifiers and stabilizers in latex manufacture as well as the necessity of including water soluble thickeners—such as casein to name one—in the paint causes trouble later. The resultant films are initially very water sensitive and remain so for some time. This is especially evident on hard glossy surfaces.

Research men so far have found no way to overcome this handicap. Once they do, with latex or any similar unsaponifiable product, the resulting impact on interior paints could be terrific.

The paint chemists at the ADM lab showed me the results of various tests they had performed with both latex and oil base paints. I put on an apron, took a brush in hand and tried some of the tests myself. We compared covering qualities, speed of drying, washability and the odors of two different brands of latex paints with one of the newer type odorless soybean oil flat paints.

And this is the way I sized them up. The advantages generally associated with the latex paints are:

1—Ease of and speed of application. You apply them with a roller in record time.

2—Drying speed. You can paint a room and move back into it almost immediately.

3—Odorless. Paint with the windows shut in the winter time. Odors won't bother you.

4—After the paint is dry you can touch up imperfections with a paint brush and the touching up won't show.

Oil Dries Fast Enough

I found the second point to be an outstanding characteristic of latex paints. There was no doubt about it. The latex paints I applied to a panel with a brush or roller began to set immediately and were completely dry in 10 to 15 minutes. The oil paints required almost an hour before they were dry to the touch, but this would seem to be fast enough for most jobs.

I tried applying the paints with both roller and brush. The latex-based paints did go on readily. But I also applied the oil-based flat with a roller and found *that it went on just as rapidly and just as easily!* I wonder how many people realize that you can apply an oil paint with a roller just as readily and speedily as any other type of paint.

I found it was much easier to cover and hide an old surface with one coat of oil paint than the latex paint, using either brush or roller, and that there was much less tendency for the oil paint to run or crawl. I found also that I could apply a considerably heavier coat with the oil paint than the latex. This difference was not so marked in one of the latex paints that contained oil. We were covering a dark primed wall board with white paint, a tough test for any paint.

For an odor test we punctured

some boxes that had been painted on the inside with the various paints earlier in the day and then sealed. I put my nose to the hole on each box. Whether the odor from any one of the paints would be objectionable might depend on the person. I detected much less odor from the oil flat than from the latex paints. There are some interior oil paints of course that do give off considerable odor.

We tried a wash test on a number of oil paints including an enamel and a flat paint and the latex paints. Ink stains, grease and crayon marks all readily washed off the enamel panel. They did not erase so easily from the flat paint where the surface had been penetrated. I was told that some manufacturers will no longer recommend their latex paints for kitchen and bathroom use where they may suffer water damage.

I did not try retouching dry paint, but was told you can do so on latex—and it will not show.

So while the latex paints scored well on most points, they did not outscore the oil paints except on speed of drying and in touching up spots. And in hiding power and washability, the oil paints had a definite advantage. ADM paint chemists also told me that latex paints are well adapted to surfaces such as fresh plaster and cement blocks which ordinarily require special primers.

Wide Range of Use

I was told that the oil paints have a much wider range of usage than the latex. You can produce a higher gloss with oil and also a complete flat. Up to this time there is no truly high gloss latex paint on the market. Present day true latex paints are not dead flat because of their inability to carry large proportions of pigment. The same oil paint can be applied over both woodwork and wall surface. Latex is more apt to peel off woodwork and it is hard to apply over an enamel surface. Oil paints come in a wider range of colors. And finally, oil paints still undersell latex paints pricewise.

I was well impressed with the latex paints, and there are probably good points in their favor that I have not brought out in this short summary. But I did not come away from Minneapolis feeling that soybean oil is about to bow out in the interior paint field.

At Archer-Daniels-Midland Co. they are not selling soybean oil short. If there is any limit to how far soybean oil can go in the protective coating field, it is yet outside their field of thinking.

As a matter of fact, ADM has several intriguing new paint products, formulated with soybean oil, in the laboratory right now. By the time you read this, one of these, a great new lacquer plasticizer, will already be on the market.

Suggests Expansion in Farm Research

Calling for greater emphasis on long-term fundamental research in agriculture, the Research and Marketing Act oilseeds and peanut advisory committee, at its annual meeting in Peoria, Ill., Mar. 5-7, also strongly urged that financial provision be made for increasing agricultural research.

The committee, a national group representing producers, processors and marketers of oilseeds and peanuts and their products, inspected the Northern Regional Research Laboratory.

Projects in the field of production recommended for expansion included: Development of improved soybean varieties for the upper South; evaluation of strains and varieties of soybeans in the germ plasm bank so as to provide a source on which plant breeders can draw to develop varieties resistant to diseases, and varieties having more desirable refining properties and more of the essential amino acids; and restoration of the analytical facilities of the U. S. Regional Soybean Laboratory at Urbana, Ill.

In the field of utilization, expansion was recommended for studies of the trichloroethylene solvent problem, particularly as it relates to the effects of such processed oil meals on animals.

Projects marked for continuation at the present rate, or increased if possible included utilization of soybean oil, soybean oil meal and derived products.

Marketing work recommended for expansion included: Studies of market outlets for oilseeds, fats and oils products to utilize more effectively these products and the facilities involved in their distribution; the study and appraisal of the world fats and oils situation and analysis of the long-term outlook for fats and oils export markets; analysis of the competition to U. S. exports from Manchurian soybeans in European markets; and analysis of domestic prices, supplies and consumption of fats, oils and oilseeds.

Marketing research recommended for continuation: Analysis of competition and price relationships among food fats and oils; field crop estimates including stocks, prices and other data on oilseeds; economic evaluation of oilseed proteins for human food; better methods of grading oilseeds and determining fatty acid fat acidity values; soybean and other oilseed marketing techniques with more attention to soybean processing.

New marketing studies recommended for consideration included: Investigations of the economic significance of changes in methods of processing meals on the availability of protein for feed; costs of storage and losses in grade of oilseed crops during storage in the South; and marketing risks in the handling and processing of oilseeds and oilseed products and their effects.

J. B. Edmondson, Danville, Ind., former officer of the American Soybean Association, was among those present.

—s b d—

PILLSBURY NAMES THREE

Three new merchandisers have been named in Pillsbury Mills' feed ingredient department by Ken W. Lawson, department manager. They are George R. Siegler, J. Dudley Hale and Scott W. McClure.

George Siegler, who has been with Armour & Co., will assist Ray Duncan of the Pillsbury feed ingredient department, Chicago, in the merchandising of millfeeds, oil meals, animal proteins and other feed ingredients.

Dudley Hale, formerly with International Milling Co., has recently taken over the responsibilities of handling millfeed sales for the feed ingredient department in Minneapolis. Floyd Henning will continue to handle protein meals and other feed ingredients in the Minneapolis office.

Scott W. McClure was formerly with Merrill Lynch, Pierce, Fenner & Beane at New York and Buffalo.

Varied Program at Ames Processor Meet

The men who did the heavy work on the Processor Conference at Ames, left to right: C. R. Weber and Iver Johnson of the Iowa State College farm crops department; R. G. Houghtlin, president of the National Soybean Processors Association, Chicago; and Ward Calland, managing director of the National Soybean Crop Improvement Council, Decatur, Ind.

Almost 100 processors and agronomists from the states of Missouri, Iowa and Minnesota—and also some from Nebraska, South Dakota, Kentucky and Tennessee—attended the fourth annual Tri-State Soybean Processors Conference at Iowa State College, Ames, Mar. 4 and 5.

The conference was sponsored jointly by the three agricultural experiment stations and the National Soybean Processors Association.

Outlook

"We will need to maintain our increased agricultural production nationally for an indefinite period whether we have peace or war," said John F. Timmons, Iowa State College professor of agricultural economics. Timmons was speaker at the annual dinner at the Ames Golf and Country Club.

"If we achieve peace, it will be necessary to remove causes of war in the form of hunger, malnutrition, disease and despair.

"If we have war, increased agricultural production will be needed to help us and our allies win the war and to rehabilitate allies and enemies following the war.

"Thus, in either event of war or peace, it becomes imperative to safeguard and build up our agricultural productivity."

Timmons said that it would be tragic, indeed, if immediate demands on our land resources would reduce long term land productivity to the point where we would be unable to:

1—Help feed people in other countries to help prevent world strife, or

2—Rehabilitate people left prostrate by a future war, or

3—Prosecute a war if such becomes necessary.

Herbicides

"Several companies are aware of the potential market for an herbicide that can be effectively used on soybeans and are leaving no stone unturned to develop one," said Dr. D. W. Staniforth of Iowa State College. An herbicide that is completely satisfactory for use on soybeans does not now exist, he pointed out.

"Most herbicides that control grasses are fairly toxic to soybeans," said Staniforth. "Soybeans are about four times as susceptible to existing herbicides as corn.

"'Weather permitting' expresses the soft spot in our traditional methods of weed control in soybeans. If we didn't have the problem of weather and could cultivate any time we wanted to, I doubt if we would be looking for herbicides to control weeds in soybeans."

Staniforth pointed out that the farm operator can afford to do considerable pre-emergence treatment for weeds in corn if it pays off in the soybean and small grain crops following. He foresaw the possibility of a trend to solid-planted soybeans to control erosion if effective herbicides can be developed for use on soybeans.

Hail Damage

"A hailstorm in August when the pods are just beginning to form will do much more damage to the soybean crop than at any other time," said C. R. Weber of Iowa State College and the U. S. Department of Agriculture in discussing the simulated hail tests that have been carried on at the college. "Before this period the beans will make a high degree of recovery and afterward the damage will not be so great," he said.

Discussing the use of chemical defoliants on soybeans, Weber said: "If you use a chemical defoliant as much as three weeks in advance of maturity you will cut yield about 25 percent and hasten maturity three days with no effect on height or lodging.

"Chemicals applied two weeks in advance of maturity reduced yield about 10 percent and hastened maturity two days. One week in advance of maturity did not reduce yield or hasten maturity."

Weber said chemical defoliants in his opinion will be useful on soybeans under the following conditions in the tri-state area:

1—When green weeds hamper combining of soybeans or the stems of the soybean plant remain green.

2—When soybeans must be removed from the field in order to plant wheat or some other fall crop.

3—When the producer desires to

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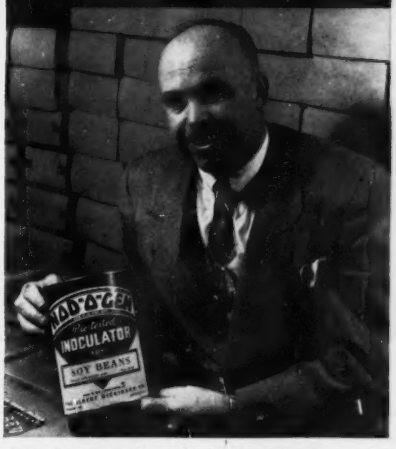
Dr. A. A. Hendrickson, chief bacteriologist, in one of the laboratory control rooms used in the cultivation of vigorous cultures.



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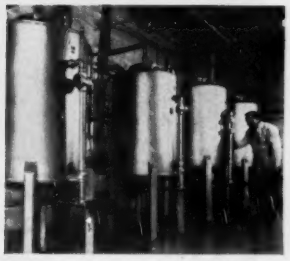

Dr. A. A. Hendrickson, inspecting some of our patented bacteria growth tanks. Another step in the rigid pre-testing program.

Section of the curing room showing bins that contain special humus inoculated with NOD-O-GEN bacteria awaiting the results of the pre-testing.

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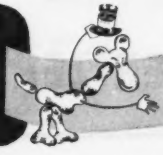


The Pre-Tested Inoculator
The Crop and Profit "Pepper Upper"

harvest his soybeans before foul weather sets in.

4—When the producer desires to harvest his soybeans before other fall work.

5—When the producer may enjoy a price advantage by harvesting earlier.

Soys in Rotation

"Soybeans make a better return than corn on some Iowa land," said Maurice O'Reilly, member of the Iowa PMA Committee.

"Quite a few farmers in certain sections of the state have found that they can net more per acre income from soybeans than from corn on some of their land. Likewise, in the cash grain area farmers like beans because they give them an early cash income in the fall.

"Farmers in Iowa are not, for the most part, replacing corn acreage with soybeans, but pretty generally are taking most of the acreage planted to beans out of their small grain, principally the oats acreage.

"I believe we can safely say that soybeans will continue to be pretty generally used in our rotation and in all probability the acreage will increase in the years ahead."

Stem canker and brown stem rot are generally the two most important diseases on soybeans in Iowa, and occur in both Missouri and Minnesota, said James M. Crall, associate pathologist of Iowa State College and the U. S. Department of Agriculture. The bacterial and fungus leaf spots are only slightly less important, and are even more important in Missouri, according to Crall.

Soybean lines with some resistance to a number of diseases are now being used in experiment station breeding programs, he said. Crop rotation has proved of value in the control of brown stem rot and may be useful in the control of some of the leaf spots.

Row planting, weed control and other cultural practices for conservation of soil moisture have been suggested for control of charcoal rot.

Planned Program

In charge of the program were Iver Johnson, head of the farm crops department at Iowa State College; Weber; R. G. Houghtlin, president of the National Soybean Processors Association, Chicago; and Ward Calland, managing director of the National Soybean Crop Improvement Council, Decatur, Ind.

Others who appeared on the program and their subjects:

W. H. Pierre, head of the agronomy department, Iowa State College, "Comparative Response of Soybeans and Corn to Levels of Soil Productivity."

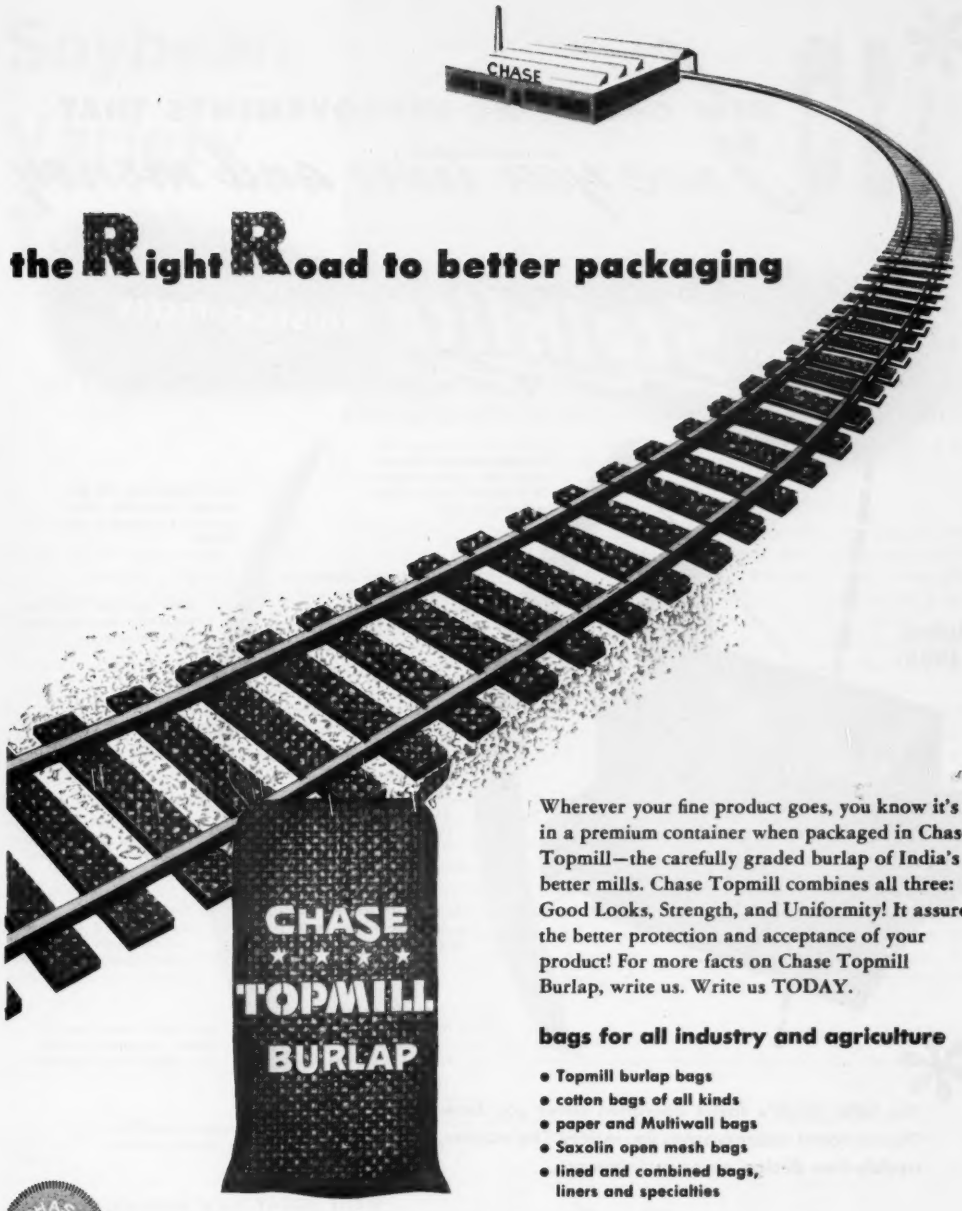
E. O. Heady, Iowa State College, "Comparative Returns in the Rotation System."

L. E. Hanson, University of Minnesota, "Present Status of Studies with Soybean Meal for Nutrition of Swine."

L. F. Williams, University of Missouri and U. S. Department of Agriculture, "Variety Performance in the Tri-State Area."

H. B. Cheney, Iowa State College, "Outlook for Increased Production on Present Acreage."

E. L. Johnson, Iowa State College, "Ratio of Soybean Meal to Corn and Roughages for Properly Feeding Livestock and Poultry."



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Soybean Variety Test

By L. M. HUMPHREY
Chief Plant Breeder, Robert L. Dortch Seed Farms, Scott, Ark.

Air view of part of the soybean and cotton breeding nurseries and increase blocks of beans and cotton at R. L. Dortch Seed Farms from a height of about 400 feet.

A soybean variety test was conducted in 1951 in conjunction with our soybean breeding program. Twenty-six varieties and strains were included. Thirteen of these were experimentals from our breeding nursery. Three experimental strains were obtained from the Delta Experiment Station, Stoneville, Miss. In addition to these experimentals, the principal varieties now grown commercially in the Midsouth were included. The table presents the results of the test and includes 10 varieties, three of our most promising experimentals and the three experimentals from Mississippi.

The methods used in conducting this test were as follows: Plots consisted of four 30-foot rows each; three randomized replications were planted and planting was done by hand in hills two feet apart in 38-inch rows. After emergence the hills were thinned to four plants each. At maturity the middle two rows of each plot were cut down and threshed on a small power driven thresher and yields determined from the weight of threshed beans. The remaining two rows of each plot were left for observations on shattering and weather damage.

The varieties in the table are presented in three maturity groups. The first includes the four full-season varieties which matured approximately the first week of November. The second group includes six mid-season varieties, maturing about Oct. 10, except D 49382 which was about one week earlier. The third group includes six early maturing varieties.

Records were taken on yielding ability, maturity in days from planting, lodging, oil percentage, protein percentage, quality of grain at time of harvest, and the amount of shattering at three times—maturity, after 15 days and after 30 days.

Yields were a little lower in 1951 than they were in 1950. The excess heat and drought in August and early September caused some damage. However, in spite of this, yields were satisfactory. The full-season varieties were led by Dortchsoy 31 which has consistently led the late group since it has been in production. In the mid-season group an experimental strain made the highest yield for the third consecutive year. It is included in the report because it will

SOYBEAN VARIETY TEST—1951

Planted May 16, 1951 — **Yields, Maturity, Lodging, Oil and Protein Percentages, Quality and Shattering of 16 Soybean Varieties**

Variety	Yield		Maturity Days from planting	Lodging*	Oil Percentage	Protein Percentage	Quality	Shattering		
	1951	1946-1951						At Maturity	After 15 Days	After 30 Days
Full Season Varieties										
Dortchsoy 31	52.8	51.5	165	1B	19.1	43.31	V. Good	None	None	None
Roanoke	43.2	43.6	171	3C	20.2	42.06	V. Good	None	Trace	2%
Volstate	39.2		170	3C	18.6	43.56	V. Good	None	Trace	4%
N47-3479 (Miss.)	38.3		173	3D	19.5	42.56	V. Good	None	Trace	2%
Mid-Season Varieties										
Dortchsoy 2	47.1	50.5	148	1A	19.4	42.56	Good	None	3%	13%
Dortchsoy 2A (Exp.)	53.7		149	1B	19.5	41.53	Good	None	Trace	4%
Hale 2	43.3	43.1	146	1A	19.5	46.06	Good	None	5%	18%
Ogden	42.6	42.7	147	2B	19.5	42.44	Good	None	8%	25%
Ralsoy	35.1	33.9	147	2B	19.1	43.84	V. Good	None	None	2%
D49-382 (Miss.)	39.6		138	1B	18.7	44.00	V. Good	None	None	Trace
Early Varieties										
Dortchsoy 67	45.6	44.0	132	2B	18.7	42.44	Good	None	Trace	32%
Dortchsoy 86 (Exp.)	34.7		122	2B	18.0	43.13	V. Good	None	1%	30%
Dortchsoy 91 (Exp.)	41.6		120	2B	19.9	46.06	Good	None	2%	50%
D623-9 (Miss.)	34.6		129	1A	18.1	45.13	V. Good	None	None	20%
S-100	34.7	30.8	132	1C	16.9	45.60	Fair	None	2%	50%
Wabash	30.0		112	1A	20.3	45.50	Fair	None	None	3%

*Lodging: Erectness of main stem 1-erect, 6 all down; lodging of limbs A-none, F-very bad.

probably be put into production in 1954. The early group of varieties was led by Dortchsoy 67, a new variety of hybrid origin. Dortchsoy 67 was placed in production for 1952 planting. Dortchsoy No. 86 and No. 91 are two earlier strains showing considerable promise and were included in the report for this reason, but they are not yet in production.

The maturities of the various varieties varied from 120 days for Dortchsoy 91 experimental to 173 days for the experimental Mississippi strain N47-3479. The chief advantage of having varieties of several maturities is that the combining period may be greatly extended.

Two lodging notes were taken: lodging of the main stem from 1, no lodging to 6, all lodged; and lodging of limbs from A, no lodging to F, all lodged. A designation of 2B or better is satisfactory. More than this would indicate a degree of lodging that would interfere with combining.

The oil and protein percentages were run by the Woodson-Tenent Laboratories of Little Rock and Memphis.

The quality of seed of all varieties was satisfactory except S-100 and Wabash which showed considerable shriveling and weather damage.

None of the varieties showed any shattering at maturity and there was generally not much shattering after 15 days. Varieties showing less than 5 percent shattering after 30 days may be considered shatter resistant.

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SOY FEATURES NEW DURKEE MARGARINE

A revolutionary new margarine, incorporating a new soybean derivative which prevents spattering and vastly improves product flavor, was offered by Durkee Famous Foods early in April.

Packaged in a fresh new way which will set a standard for margarine merchandising, the new Durkee's Own Grade AA margarine is being introduced with an aggressive national advertising and promotion campaign.

Discovery of the secret new soybean derivative is a milestone in the development of margarine into an ideal food, according to H. L. Slaughter, general manager of Durkee Famous Foods. Developed and exhaustively tested in the laboratories of the soya products division of the Glidden Co., the soybean ingredient makes possible the most complete and intimate margarine admixture yet achieved, and because of this, increases the assimilation of vitamins, minerals and other nourishing elements by the human digestive system.

The new product is being marketed under the present brand name, Durkee's Own Grade AA.

"Margarine has been an interesting challenge to food scientists for many years," commented Slaughter.

"Our chief aim has been to make it even more tasty and nutritious and to bring about a closer binding together of the fine food elements of which it is made. As these particles become more strongly linked, the important food values the margarine contains are more readily and completely assimilated. To achieve this, we sought a substance to be added to margarine to strengthen that linkage.

"At the soya products laboratory we have been hunting this substance for several years. Now we have found and tested a substance from soybeans which does that job more effectively than anything previously discovered."

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73,000 HAVE SEEN THE SOYBEAN FILM

Soybeans—the Feature Story, 27-minute color movie that tells the story of the soybean crop and its place in U. S. agriculture, showed to over 73,000 people during its first year of existence. This is reported by J. W. Calland, managing director of the National Soybean Crop Improvement Council, Decatur, Ind., which produced the film.

The 58 copies of the 16-millimeter soybean movie in existence were shown 1,348 times to a total of 73,887 people between Feb. 1, 1951, when the film was issued, and Feb. 1, 1952.

Copies of the film are available for showing to farm and other groups from the Soybean Digest, Hudson, Iowa.

They are also available from soybean processors; the extension film libraries of the agricultural colleges of Ohio, Indiana, Illinois, Iowa, Arkansas, Kansas, Virginia, Missouri, and Minnesota; Eastern Illinois State College, Charleston, Ill.; and Modern Talking Picture Service, 142 E. Ontario St., Chicago, Ill.

Groups that would like to show the film should send in their requests as far in advance as possible to be sure of getting it.

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BRAZIL'S CROP LARGER

Soybean production in Brazil in 1951 totaled 66,000 tons compared with 38,600 tons in 1950, reports USDA's Foreign Crops and Markets.

Because of favorable prices and steady demand for soybeans by foreign markets, unofficial sources believe that with favorable weather the 1952 harvest will total about 94,000 tons (3.1 million bushels).

Most of the soybeans enter the export market. However, two new mills now being built will increase consumption of soybeans and oil considerably in 1952. Increased production of soybeans is also being encouraged.

Brazilian soybean exports amounted to 550,415 bushels during the first nine months of 1951. The largest volume, 304,382 bushels, was shipped to the United Kingdom.

The Dec. 1951 wholesale price on the Porto Alegre market was the equivalent of $2.54 per bushel compared with $2.30 in Jan. 1950.

—s b d—

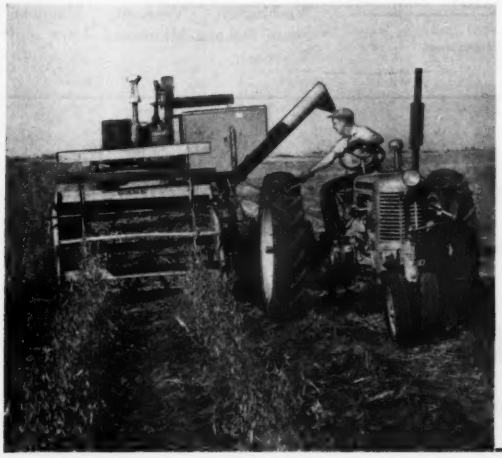
NEW BAG CLAMP

This new and improved combination bag clamp for the "Apex" bagging scale has been announced by Burrows Equipment Co., 1316-D Sherman Ave., Evanston, Ill. It will also fit virtually all other bagging scales on the market. The outstanding feature of the clamp is that it will fit both small and large bags. It also opens the bag wider and permits a 25 percent greater flow of material than is usually obtained.

COME CLEAN and WHOLE

FROM CASE COMBINES

Case Self-Propelled Combines are built with 9, 12 (above) and 15-foot headers. Pull types available in 5, 6, 9, and 12-foot models. All with choice of spike or rub-bar cylinder. Six-foot Model "A" shown below.



A cracked bean is a wasted bean and trash just adds to the dockage. Thousands of growers, therefore, have found it to their advantage to harvest their soybeans with Case Combines. Buyers, too, have often expressed a preference for Case-threshed seed because they have learned to expect a whole, clean product from Case Combines. Whether with spike-tooth or rub-bar cylinder, a Case Combine is easy to adjust for gentle, yet thorough threshing. Case straw racks are extra long to assure complete separation of valuable beans. And Air-Lift Cleaning, found only in Case Combines, gets rid of trash while saving the seed. J. I. Case Co., Dept. D-75, Racine, Wis.

CASE

USDA Forecasts a Record Soy Acreage

A record acreage of soybeans *planted alone for all purposes* is indicated for 1952. Growers' intentions as of Mar. 1 point to 15.5 million acres compared with 14.8 million acres last year and the 10-year average of 12.8 million acres grown alone for all purposes, according to the crop reporting board of the U. S. Department of Agriculture.

Intended shifts in acreage of soybeans by states and areas are rather pronounced this year. The heavy producing East North Central states report reductions of from 4 to 10 percent. In contrast, the West North Central states, with the exception of Iowa, show increases of from 9 to 35 percent. The sharpest increase in acreage comes in the South Central states with the prospective acreage for the area 16 percent above last year.

Increased prospective acreages of corn in the four large soybean producing states of Ohio, Indiana, Illinois, and Iowa, have resulted in less intended acreage of soybeans. Indiana and Illinois each expect decreases of about 4 percent. Ohio reports 5 percent and Iowa indicates a reduction of 7 percent from 1951. The soybean acreage trend continues upward in Minnesota, Missouri, the Dakotas, Nebraska, and Kansas. The intended acreage in Missouri this year, at 1.7 million acres planted alone, is second only to the 3.6 million for Illinois.

The South Atlantic area indicates little change from last year. Decreases in Virginia and North Carolina, the heaviest producers in the area, were offset by increases in the smaller producing states, especially South Carolina. The acreage in Florida continues to expand but is still small. All states in the South Central area report intended increases over last year. The most substantial increases are in Mississippi, Arkansas, and Oklahoma. The acreages in those states are expected to be at record levels in 1952.

If about the same proportion of the total acreage of soybeans is harvested for beans as in the last two years, the acreage for beans would be about 13.8 million acres. If this acreage is realized and 1946-50 average yields are attained, by states, the 1952 production of beans would be about 272 million bushels. Such a production would be about 3 percent below 1951 and about 9 percent less than the record production of 1950.

The total acreage in oilseeds will be little changed from 1951 as there will be decreases in other crops to compensate for the increase in soybeans.

SOYBEANS: Acreage planted (2)

State	Average 1941-50	1951	Indicated 1952	1952 as percent of 1951
	Thousand acres			Percent
N. Y.	14	9	8	90
N. J.	37	39	38	98
Pa.	77	43	39	90
Ohio	1,120	1,159	1,101	95
Ind.	1,628	1,659	1,593	96
Ill.	3,694	3,738	3,588	96
Mich.	132	128	120	94
Wis.	96	63	57	90
Minn.	654	1,140	1,243	109
Iowa	1,786	1,568	1,458	93
Mo.	830	1,396	1,745	125
N. Dak.(3)	14	31	34	110
S. Dak.	29	63	69	110
Nebr.	37	60	81	135
Kans.	259	495	668	135
Del.	65	69	69	100
Md.	86	95	98	103
Va.	170	220	216	98
W. Va.	29	11	10	91
N. C.	392	439	417	95
S. C.	53	114	135	118
Ga.	77	86	92	107
Fla.		10	12	120
Ky.	197	212	214	101
Tenn.	223	310	322	104
Ala.	228	166	174	105
Miss.	352	600	690	115
Ark.	365	685	890	130
La.	113	107	110	103
Okla.	24	120	162	135
Tex.	17	3	4	133
U. S.	12,788	14,838	15,457	104.2

(1) In principal commercial producing states.
(2) Grown alone for all purposes.
(3) Short-time average.

— s b d —

REPEAL MARGARINE LAW IN NEW YORK

New York became the 41st state to permit the sale of colored margarine when a bill to repeal the 65-year-old ban in that state passed both houses of the legislature on Mar. 6 and 7, and then was signed into law by Gov. Thomas Dewey.

It was the first time in New York legislative history that a bill to legalize yellow margarine had reached the floor. Powerful dairy interests had kept previous measures bottled up in committee.

Assemblywoman Genesta M. Strong sponsored the bill which carried her name. She had led the fight to repeal the yellow margarine ban in New York for a number of years.

New York, with its 15-million-population impact on the margarine market, thus became the eighth state to lift its margarine bans since federal repeal went into effect in July 1950.

The seven states that still prohibit the sale of yellow margarine are Washington, Vermont, Montana, South Dakota, Minnesota, Iowa, and Wisconsin.

Soy Exports Set Record in 1951

The United States exported a record volume of soybeans and soybean oil in the calendar year 1951, reports Foreign Crops and Markets. Shipments in soybean equivalent amounted to 76.9 million bushels, equal to over one-fourth of the record production in 1950. Last year's exports exceeded the previous high of 61.9 million bushels in 1949 by almost one-fourth and the 50.2 million shipped in 1950 by over 50 percent.

Of the 76.9 million bushels, 24.6 million or about one-third represented actual shipments in the form of beans with the remaining two-thirds representing the comparative volume actually exported as oil.

The largest single volume of soybeans, 11.8 million bushels or 48 percent of the total, went to Japan. Canada with 4.8 million bushels accounted for the second largest volume.

The bulk of the oil—84 percent—was exported to Europe with Spain by far the largest purchaser. The 72,641 tons of soybean oil sent to Spain helped make possible the substantial exports of olive oil from that country to the U. S. in 1951. Other major European purchasers were Italy, the Netherlands, Western Germany and the United Kingdom.

Almost 10 percent of the oil exports went to North American countries with Canada and Cuba the principal markets.

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MILITARY AWARD TO WARREN GOSS

A certificate of appreciation and the patriotic civilian service lapel button has been presented to Warren H. Goss, associate director of research and technical development for Pillsbury Mills, Inc., Minneapolis. The presentation was made by Col. C. H. Schabacker, acting chief of the Minnesota Military District at a ceremony at district headquarters in Minneapolis.

The award was presented to Goss for his work as a technical investigator for the Technical Industrial Intelligence Committee of the Joint Chiefs of Staff. This committee was composed of scientists and engineers and sent to Germany as soon as hostilities ceased to search for scientific information on foreign laboratories and factories.

The certificate of appreciation and patriotic civilian service lapel button is presented to Warren H. Goss by Col. Clarence H. Schabacker.

Goss was assigned a mission of investigating oil mills and vegetable oil refineries and to learn as much as possible about German technical knowledge in this field. Because he had compiled complete records of locations and descriptions of oil mills and refineries in Europe, Goss was well suited for this assignment.

Goss spent between four and five months in Germany and visited practically every installation except those behind the Iron Curtain. He particularly concentrated on the Hamburg-Harburg area, considered one of the greatest oil milling centers of the world.

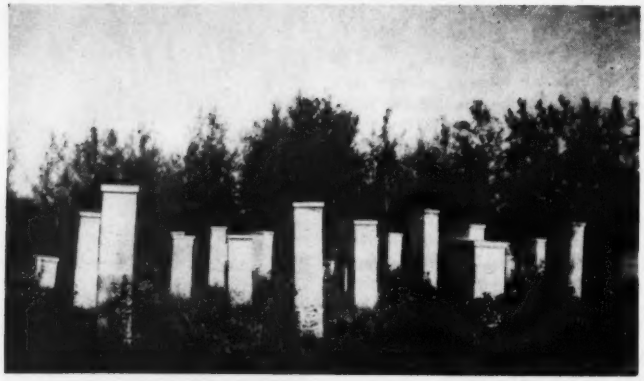
The information collected in his investigation was assembled in a series of 42 reports. These reports, because of the valuable technical material they contained, were made available to American industries. Subsequently, several of the disclosures have found commercial application in this country.

The Hobart Publishing Co., Washington, D. C., assembled these reports as a book, The German Oil Seed Industry, by Goss, which received wide circulation.

UNITED STATES: SOYBEAN AND SOYBEAN OIL EXPORTS, 1951 WITH COMPARISONS

Country of destination	Soybeans			Soybean oil†		
	Average 1937-39°	1950‡	1951‡	Average 1935-39	1950‡	1951‡
	1000 bushels			Short tons		
North America:						
Canada	1,197	4,137	4,827	76	4,384	9,604
Cuba	§	§	1	1,917	7,390	6,959
Other	62	3	1	467	2,178	8,150
Total	1,259	4,140	4,829	2,460	13,952	24,713
South America	§	§	§	151	1,340	3,742
Europe:						
Austria	—	—	—	—	7,582	8,530
Belgium Luxembourg	15	752	1,323	—	3,278	5,808
Denmark	606	1,595	—	—	14	—
Finland	18	—	—	65	110	—
France	52	2,338	1,795	—	82	3,004
Germany (Western)	60	3,279	309	—	69,865	17,063
Greece	—	—	2	—	1,050	5,718
Hungary	—	—	—	—	16	—
Iceland	—	§	§	12	1,270	489
Italy	§	372	—	2	16,036	53,404
Netherlands	2,006	1,037	1,737	—	7,468	19,651
Norway	113	291	563	17	—	—
Portugal	—	—	—	—	—	2
Spain	—	—	—	—	22,912	72,641
Sweden	604	1	—	106	1	616
Switzerland	—	18	73	50	2,665	1,972
Trieste	—	—	§	—	530	883
United Kingdom	59	—	—	1	—	15,898
Yugoslavia	—	—	2	—	—	8,132
Total	3,533	9,683	5,804	253	132,879	213,811
Asia:						
Japan	—	4,722	11,768	¶	¶	114
Other	§	565	2,044	27	3,595	4,344
Total	§	5,287	13,812	27	3,595	4,458
Oceania	§	—	—	21	12	4,488
Africa	1	§	162	322	327	4,552
Grand total	4,793	19,110	24,607	3,234	152,105	255,764

† Crude and refined oil converted to crude. ° Not separately classified prior to 1937. ‡ Preliminary. § Less than 500 bushels. ¶ Less than .5 ton. Compiled from official sources.



At times soybeans produce a good honey flow, other times not. Beekeepers would like to know why as soybeans are potentially a big honey source.

Honey From Soybeans!

By J. H. DAVIS

Inspector of Apiaries, Little Rock, Ark. Reprinted from American Bee Journal.

Honey production from soybeans is at last a proved fact. For years this was doubted by beemen as bees were seldom found on soybean blossoms.

Several years ago Vaughn Wilson of Bethesda, Ark., who operates in the cotton area in the eastern part of the state, placed bees on a buckwheat vine location adjacent to a large soybean field and secured a wonderful crop of nice "vine" honey. Then the farmer failed to grow soybeans in this field and that year the vines yielded no honey surplus. The next year the farmer repeated his soybean crop and again the "vine" flow was abundant. Subsequent events served to substantiate the evidence that the supposed "vine" honey had been secured from soybeans.

In 1948 the boll weevil threatened to destroy the cotton crop. The poisoning program for the control of this crop pest became a menace to bees and they were quickly moved to any location beyond flying distance of the poisoned fields. There was no possible chance for the bees to sustain themselves on some of these isolated yards and feeding was necessary. The inspection service was disrupted and bees were examined wherever found. The chief inspector, making the rounds in this district, joined the men feeding bees on some of these locations.

About 50 colonies that had produced a good crop of vetch honey and were still strong were placed close to some soybean fields with no thought of honey production. The hives were two-story brood nests with a shallow super on top. When this yard was visited, much to the astonishment of all concerned, the hives were heavy with honey and many colonies were crowding the brood nest. Instead of needing food they were in dire need of extra supers for honey storage. Now this was toward the last of August when soybeans were the only plants blooming in this area. Needless to say, all available colonies were rushed to similar fields but several locations failed to show any results. Other beekeepers reported like experiences last year, some obtaining surplus honey from soybeans while others were disappointed.

With this information as a start, a careful study was made of the nectar-producing fields. Indications were that the variety of the beans has less to do with nectar production than the cultural practices. It was noted that where soybeans produced a honey surplus they had followed a highly fertilized fall or winter crop. They seem to thrive on leftover fertilizers (those not used by the previous crop) instead of those applied directly to the soybeans themselves. Agronomists agree that the soybean has the peculiar ability to utilize this leftover fertility. Thus any crop of soybeans, regardless of variety, that follows a well-fertilized fall or winter crop seems to be nectar producing.

The honey is water white and of good quality. When the season is favorable it is not unusual to obtain an average surplus of more than 100 pounds per colony. The blossoms are not heavy nectar producers and the bees must work diligently and visit many flowers before securing a load. One field where several hundred hives were located was so covered with bees that the owner could work there only after rains to remove the grass and weeds that were detrimental to the plants.

The best soybean nectar-producing areas of Arkansas are the river bottoms where the soil is deep and fertile. The beans start blooming about the second or third week in July and continue to bloom until about the middle of September. Few other nectar-producing plants are then available.

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DEVELOP A NEW SOLVENT PROCESS

A new process for solvent-extracting oil from cottonseed and other oilseeds has been developed on a pilot-plant scale at its Southern Regional Research Laboratory, the U. S. Department of Agriculture announces.

The process, which is especially adapted to use by small mills, is called "filtration-extraction," because it involves the use of a continuous vacuum filter as the major operating unit. It worked successfully with cottonseed, and with certain modifications also proved to be suitable for the oil processing of rice bran and soybeans, on a pilot-plant scale.

For applying the filtration-extraction process, the investment required for equipment and the cost of operation are both relatively low; yet high-quality meal and oil are produced. No radical or expensive departure from the operations now used to prepare cottonseed for hydraulic or screw pressing is required, although the method of preparation is modified.

The amount of solvent required for extracting the oil is small, and conventional equipment can be used in removing it from the oil and meal after extraction.

Technical information about the process has been published, and several demonstrations have been held at the laboratory to acquaint the oilseed-processing industry with its application on a pilot-plant scale. Additional data to assist the industry in evaluating the process for industrial use are being obtained and will be supplied on request. Inquiries should be addressed to E. A. Gastrock, head engineering and development division, Southern Regional Research Laboratory, U. S. Department of Agriculture, New Orleans, La.

A Pair of Aces for Packing Your Soybean Meal and Cake

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PUBLICATIONS

Use Bromated Soy Flour in Greece

The use of soy flour in bread has been urged for European countries during the past few years because of the need for more protein in diets. The use of soy flour in Europe presents problems different from those in the United States. Europeans use long-extraction wheat flours of rather low protein content, and much of their bread is made without sugar and shortening. In Greece, for example, bakers use flour of 90-percent extraction and never any sugar or shortening. As Greek bakeries are small and their equipment is crude, it is not to be expected that practices of modern bakeries in the United States can be adopted and applied.

A representative of the Economic Cooperation Administration's mission in Greece reported to members of the staff of the Northern Regional Laboratory the difficulties which Greek bakeries had encountered in using soy flour in bread. The results were so unsatisfactory that in one year less than 10 percent of their allotment of soy flour was used. Research at the Northern Laboratory indicated the possibility of overcoming some of the objections to the use of soy flour and of making possible a corresponding improvement in the Greeks' diet.

A series of experiments at the Northern Laboratory showed that addition of oxidizing agents, such as potassium bromate, was necessary when fortifying high-extraction flours with soy flour. When 5 percent of soy flour was used without oxidizing agents, the bread was inferior. The volume of the loaf, which normally is small in comparison with that of bread of equal weight in this country was reduced by a third; thus the bread became unappetizing even to people ordinarily accustomed to heavy bread. It was found that, on addition of the correct amount of potassium bromate, the loaf volume became normal and other undesirable characteristics disappeared. However, it was evident that because of the crude working conditions and the small size of their bakeries, the Greek bakers could not use the oxidizing agents by themselves. Hence it was suggested that the correct amount of potassium bromate be added to the soy flour at the time of its manufacture.

Representatives of the Economic Cooperation Administration and of the Production and Marketing Administration were informed of the results of the Laboratory's work and of the proposal for improving the situation. They agreed to the proposal and immediately made arrangements for the purchase by the Economic Cooperation Administration of a trial shipment of bromated soy flour to Greece. Through the splendid cooperation of the soy-flour industry of the United States, the flour was manufactured with addition of the specified proportion of oxidizing agent. An initial shipment of 1,000 tons has been sent to Greece.

REPORT OF THE CHIEF OF THE BUREAU OF AGRICULTURAL AND INDUSTRIAL CHEMISTRY, AGRICULTURAL RESEARCH ADMINISTRATION, 1951. U. S. Department of Agriculture, Washington 25, D. C.

Oil Flavor Stability

In laboratory tests with solvent extracted soybean oils at Ottawa and Toronto, Canada, flavor stability was not helped by the various processes that have been developed for this purpose.

Flavor stability was not improved by deodorization in the presence of citric acid, increased deodorization time, treatment with activated magnesia, preliminary treatment with concentrated hydrochloric acid, or by refining in miscella with or without subsequent addition of butylated hydroxyanisole.

The tests were conducted largely with glass equipment. Say the authors: "In laboratory experiments done largely in glass, procedures designed to take care of heavy metal contamination may be superfluous." But they conclude, quoting K. S. Markley, "It would appear . . . that no process has yet been developed which is both practical and significantly effective in retarding or preventing the development of off-flavors in (soybean) oil."

PROCESSING PROCEDURE AND FLAVOR STABILITY IN SOYBEAN OIL. By H. J. Lips, N. H. Grace and J. A. Ziegler. Canadian Journal of Technology. Jan. 1952. Vol. 30, No. 1.

Stabilizer of Flavor

Phytic acid is the most recent and promising discovery at the Northern Regional Research Laboratory of compounds that stabilize the flavor of soybean oil. This acid, in combination with calcium and magnesium, is present in many foods, particularly the cereal grains. It is available from corn wet-milling plants.

Like citric acid and sorbitol, both of which have been widely accepted as oil stabilizers by the soybean-oil industry, phytic acid stabilizes soybean oil by virtue of its ability to inactivate naturally occurring and contaminating metals.

Phytic acid has a distinct advantage over citric acid, sorbitol, and related compounds. When phytic acid is added at the beginning of the deodorization step in refining soybean oil, its capacity to counteract the injurious effect of added metals is evident, not only during deodorization, but throughout the subsequent storage life of the oil.

REPORT OF THE CHIEF OF THE BUREAU OF AGRICULTURAL AND INDUSTRIAL CHEMISTRY, AGRICULTURAL RESEARCH ADMINISTRATION, 1951. U. S. Department of Agriculture, Washington 25, D. C.

Work with Lecithin

Modification of the consistency of commercial soybean lecithin has been accomplished by a chemical treatment developed under a Research and Marketing Act project at the Northern Regional Laboratory, Peoria. Reaction of lecithin with isocyanates has given products that range in physical form from viscous liquids through soft and hard waxes to hard, brittle, resin-like solids, depending on the type and amount of isocyanate employed.

A waxy, semibrittle product was prepared on a pilot-plant scale by reacting lecithin with phenyl isocyanate. In contrast to the unmodified lecithin, it formed with comparative ease water suspensions that showed reduced surface tension and improved stability toward microbial action. On request, this product has been supplied for evaluation to potential users, such as manufacturers of printing inks and floor waxes.

REPORT OF THE CHIEF OF THE BUREAU OF AGRICULTURAL AND INDUSTRIAL CHEMISTRY, AGRICULTURAL RESEARCH ADMINISTRATION, 1951. U. S. Department of Agriculture, Washington 25, D. C.

Linolenic Acid Study

Studies supported by the Research and Marketing Act at the Northern Regional Laboratory, Peoria, show that linolenic acid is a flavor-unstable component of soybean oil. It has been shown that the flavors peculiar to aged soybean oil could be imparted to otherwise stable cottonseed oil by introducing linolenic acid into the cottonseed oil.

There is further confirmation of the major part that linolenic acid plays in causing the undesirable flavors. Some of the volatile flavoring substances isolated and identified by the University of Pittsburgh in the Research and Marketing Act research

have been found to be formed by storing linolenic acid esters in the presence of oxygen.

Cleavage of the linolenic acid molecules to give volatile flavoring substances occurs at the very early stages of storage. The apparent difference in reaction mechanism for linolenic acid esters may account for the difference in flavor stability of soybean and cottonseed oils.

REPORT OF THE CHIEF OF THE BUREAU OF AGRICULTURAL AND INDUSTRIAL CHEMISTRY, AGRICULTURAL RESEARCH ADMINISTRATION, 1951. U. S. Department of Agriculture, Washington 25, D. C.

Antibiotics, B-12

Use of antibiotics in the chick diet spares the need for vitamin B-12 and indirectly spares methionine and choline, according to workers in the departments of poultry and biochemistry at the University of Wisconsin.

When chicks were fed a corn-soybean oil meal ration, the addition of streptomycin with various levels of vitamin B-12 resulted in a higher storage of the vitamin in the liver of the chick than that of a similar ration without the antibiotic. Maximum growth was obtained with a ration containing fish solubles and an aureomycin residue but the storage of vitamin B-12 in the chicks' livers was low.

A RELATIONSHIP BETWEEN ANTIBIOTICS, VITAMIN B-12, AND CHOLINE AND METHIONINE IN CHICK GROWTH. By L. L. Sunde, Paul E. Waibel, W. W. Cravens and C. A. Elvehjem. Poultry Science, Sept. 1951, pages 668-671.

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CO-OP MILL CONFERENCE

The fifth conference of cooperative soybean oil mill operators will be held at Peoria, Ill., May 12 and 13, Reid T. Milner, director of the Northern Regional Research Laboratory at Peoria, has announced.

The conference is sponsored jointly by the Northern Regional Research Laboratory and Farm Credit Administration.

"As in the past, we want this to be a working conference with plenty of time allowed for discussion," said Milner. "Our staff will review and describe their active research work on soybeans and soybean products. Cooperative representatives will be afforded opportunities to discuss operating problems with each other, the Laboratory staff and others."

Attendance will be limited to three representatives from each cooperative soybean oil mill, one from each District Bank for Cooperatives and a limited number from the Northern Regional Research Laboratory and the Washington office of USDA.

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HEARING ON TRANSIT

A hearing on transit on soybeans at Decatur, Ill., Bloomington, Ill., St. Louis, Mo., and Taylorville, Ill., was held before the executive committee of the Southwestern Lines at the Southwestern Freight Bureau offices in St. Louis, Mo., Mar. 26.

The proposal under consideration was to establish transit on soybeans from southeast Missouri when soybean cake or oil meal is reshipped to destinations in Arkansas, Louisiana, Oklahoma and Texas.

Decision will be announced later.

Favors Change in Soybean Grades

TO THE EDITOR:

When the last request (was made) for changing the soybean standards from an allowable 3 percent foreign material for No. 2 beans to 2 percent, and from an allowable 14 percent moisture to 13 percent, we immediately took action and wrote letters to all soybean handlers in the state asking their opinion and what action they thought we should take. We pointed out to them, leaning quite heavily on information obtained from the Soybean Digest, that foreign material was not being accepted readily in the export markets, and since our market was primarily export, we should be greatly concerned about this matter.

Most of the dealers reacted favorably which resulted in our writing to Drexel D. Watson, director, grain branch, Washington, D. C., as follows: "It appears to be the consensus of opinion as is shown by the enclosed letters, plus the verbal reactions received, that lowering the moisture content of soybeans as it is now authorized by the U. S. Official Grain Standards would work a hardship on the soybean producers in Virginia. Most of these dealers seem to think the requirement for foreign material could be lower."

The following quotation was taken from my letter to the dealers: "The best information that I am able to obtain is that soybeans with 14 percent moisture can be shipped and stored for a period of time without damaging effects. On the other hand foreign material has always been a problem in that a number of large warehousemen are able to saturate the soybeans with the maximum amount of foreign material allowed and thereby cause our soybeans to receive unfavorable criticism."

Most soybean harvesters today can clean beans very satisfactorily. Even some can collect these screenings so they can be destroyed which should lessen the weed growth from year to year. The morning glory seed and some other seed of similar size are hard to separate.

I think we would be in favor of a soybean price based on clean beans, and if it were enough difference between the clean bean price and a 3 percent foreign material price, practically all of our beans coming from the farms would be reasonably clean. A large percentage of the beans are now cleaned but with the present soybean standards we are inclined to advise farmers not to over clean their beans.

We have done some work on testing the oil content for the various varieties of beans produced in Virginia. I think we can safely say that the Ogden variety, which is the most popular, has a favorable oil content. The S-100, which is probably the next most popular variety, has an oil content not quite as good as the Ogden, but is, according to our previous tests, very favorable when mixed with the Ogden variety. We have discussed this matter with the extension people on the basis that their recommended varieties should not only be based on the total yield per acre for the various sections, but also on their ability to yield large amounts of oil. I believe, with the extension people stressing varieties of these characteristics, and the market paying a price for clean or reasonably clean beans, the problem of soybeans containing a low oil content and being undesirable for excess foreign material would be corrected.—*B. W. Sadler, supervisor grain and hay section, division of markets, Department of Agriculture and Immigration, Commonwealth of Virginia, Richmond, Va.*

Should Pay Premiums

TO THE EDITOR:

Some may take it from my letter, which you published (January Soybean Digest) that the writer is in favor of cutting down the returns to the producer, that is, not allowing payment for the foreign material up to 3 percent. This was not our intention, however, but believe that if the grades and premiums were established as they were a number of years ago, the producer who really takes care of his crop would receive a substantial amount more than at present, and under present grades and allowances.

In other words, it seems that the present grades are kidding the farmers, in that they are presumed to be getting pay for the foreign material, whereas, common sense would indicate that the loss in the handling and inclusion of the foreign material in price must be taken care of in the price the mills or the exporters pay for the beans. In turn it seems that under present grades we are losing a material portion of the normal export demand, and that this decrease in export demand is increasing, and will continue to increase on account of the condition of the beans shipped from this country.

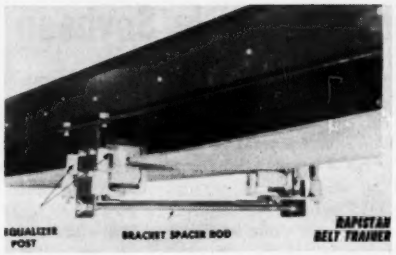
Again this may be part of the solution as to why the mills crushing beans in this territory are up against it, in crushing them on a profitable basis. As you know the mills crushing beans—which is also true of corn and wheat—can pay more for a low-moisture-content commodity than for those running up to even 14 percent moisture. In addition to this, especially on soybeans, there is a question of 14-percent-moisture beans storing safely under certain weather conditions.

Really believe that a large part of this trouble can be cured by the mills paying the premiums paid heretofore for beans, according to moisture, as certainly there is more value to them. This is also true of the export trade. As a matter of fact both the mills and the export trade have discontinued paying a premium, even for No. 1 beans over No. 2, which is certainly catering to a lower standard of beans received from the producer.

Believe a campaign should be made among the crushers in this country and also the exporters. No doubt the export trade can pass this premium for quality, both as to moisture and foreign material, to the foreign buyers.

In addition to the moisture and foreign material content in beans under present grades, this certainly kills the incentive for the farmers to harvest their beans in proper condition, and in turn any of the grain dealers from putting in facilities to properly handle the beans from the farmer to the ultimate buyer. This seems to me to be needed as much as is the case with those handling wheat or corn.—*R. C. Davis, R. C. Davis Cotton & Grain Co., Charleston, Mo.*

LETTERS



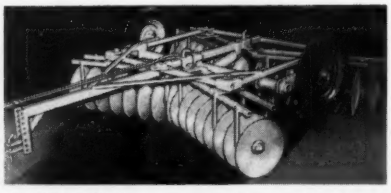
BELT TRAINER. A positive action belt trainer that automatically keeps wandering conveyor belts aligned is now being manufactured by the Rapids-Standard Co. This new device eliminates wear, down-time, and excessive maintenance costs caused by creeping belts.

The new trainer can be installed on any make of conveyor that has the return belt exposed beneath the bed. It is designed for use on fabric or rubber-covered belts three-sixteenths inch or more thick.

For complete details write Soybean Digest 4a, Hudson, Iowa.

BELT CONVEYOR. A four-page, two-color bulletin with photos, application sketches, and complete specifications of the new Rapistan Table-Veyor horizontal belt conveyor has just been published by the Rapids-Standard Co. Illustrated and explained in the new bulletin are the many uses of the Table-Veyor, including its application to assembly operations, sorting, order-packing, checking, testing, inspecting, and similar jobs.

Free copies of the new bulletin TV-52 may be had by writing to Soybean Digest 4d, Hudson, Iowa.



NEW DISC. A new high standard of discing efficiency is claimed by the Cobey Hydra-Flex disc harrow produced by the Cobey Corp. Three of the farmer's most troublesome discing problems are said to be solved by features such as hydraulically retractable wheels, easy angling of the disc gangs, and flexibility of the frame, plus flexibility of the disc gang mounting.

The Cobey Hydra-Flex disc harrow is available with either plain round discs or cut-out discs—and in sizes to match any tractor.

For further information write Soybean Digest 4c, Hudson, Iowa.

NEW PRODUCTS and SERVICES

BAG CONVEYOR. This new Burrows light weight aluminum bag conveyor embodies many improved features. It is handy, operates efficiently at any angle including a horizontal position. Without undercarriage, it can be utilized as a floor-to-floor conveyor.

The unit is available in 13, 15, 17 and 19-foot lengths. The belt, of three-ply impregnated rubber, operates at a remarkably high rate of speed, about 80 feet per minute.

For details and prices write Soybean Digest 4b, Hudson, Iowa.

INDUCTION MOTORS. Construction features and types of Allis-Chalmers large vertical induction motors widely used for pumps and other vertical drives are described in a new bulletin, "Large Vertical Induction Motors," O5B7629.

The bulletin covers motor ratings in 40 C, 60 cycle from 60 hp, 200 rpm to 800 hp and larger at 1800 rpm.

For copies write Soybean Digest 4e, Hudson, Iowa.

STRAW CUTTER, SPREADER. The distributor of the new improved Polaris Cutter and Spreader announces several improvements and new uses for the machine, which thoroughly processes the straw as it leaves the combine.

For information write Soybean Digest 4f, Hudson, Iowa.

GRITS and FLAKES... FROM THE WORLD OF SOY

◆ The Farmers Co-op Co., Manson, Iowa, has let a contract to Tillotson Construction Co., Omaha, Nebr., for a 150,000-bushel reinforced concrete grain elevator. The elevator will be equipped with a 25-bushel Richardson scale, a Howell head drive and Ehrsam truck lift and manlift. Construction began in early March.

◆ The Dairy Pool, a co-op in north central Saskatchewan, Canada, has started the manufacture of margarine to protect its $1,500,000 investment in milk, butter and cheese making plants. Margarine manufacture will make use of idle creamery machinery and help market dairy products, since the margarine formula calls for 15-percent whole milk.

◆ North Iowa Cooperative Processing Association, Manly, Iowa, has a government allocation of steel for a $1,400,000 solvent extraction plant to be built at Mason City. The co-op is to build a 150-ton capacity plant to be completed Jan. 1953.

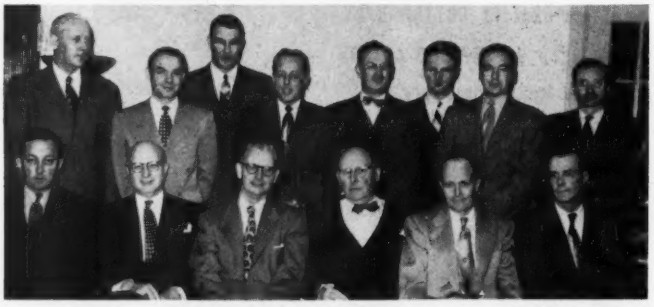
◆ *Processing plant of Iowa Soya Co., Redfield, Iowa, is back in operation after a fire in late February. Damage to the plant was reported to be relatively small.*

◆ Construction of a 223,000-bushel reinforced concrete grain storage annex is well under way for the firm of Harper & Bowers, Estill, S. C. Contractor is the Tillotson Construction Co., Omaha, Nebr.

◆ Materials are being delivered to the Farmers Elevator Co., Draper, S. D., so construction of their 100,000-bushel reinforced concrete grain elevator can start this spring. Equipment will include a 30-horsepower Howell drive, 10-bushel Richardson scale, Ehrsam truck and manlift and a 50-ton Fairbanks scale. Contract was let to Tillotson Construction Co., Omaha, Nebr.

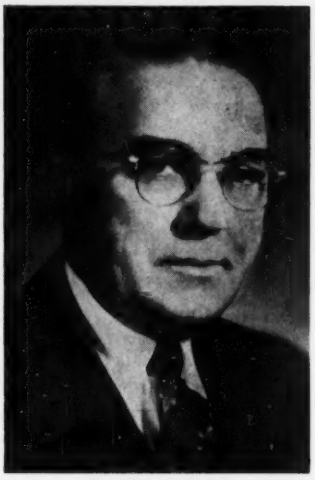
◆ Soya Foods Ltd., London, England, announces that J. C. Ferree, who was one of the pioneers of the soy flour industry in Great Britain and for the past 19 years chairman and managing director of Soya Foods Ltd., has left that company. He has formed a new company, Soya and Protein Products, Ltd., at Duke Street House, 415-17 Oxford St., London.

◆ The spring meeting of the National Agricultural Chemicals Association was held in San Francisco, Calif., Apr. 6-9, the first time in many years the Association has met on the West Coast.



Here are some of the owners and top management officials of grain handling and processing companies in the Omaha, Nebr., area who got together recently to conclude arrangements for the convention of the Society of Grain Elevator Superintendents at Omaha, Apr. 16-19. Front row left to right: Carl Talmon, Farmers Union Co-op.; John Oertel, Archer-Daniels-Midland Co.; Axel Nielsen, West Central Co-op Grain Co.; H. Berghoff, Nebraska-Iowa Grain Co.; Harry Christianson, Rosenbaum Bros.; and Roy Guinan, Loveland Elevator Co. Back row, l to r, Earl Miller, Updike Grain Co.; Ed Egan, Pillsbury Mills, Inc.; Chas. Green, Omaha Elevator Co.; Don Whitmore and Robt. S. Scoular, Scoular-Bishop Grain Co.; Jas. Hogan, Kansas Grain Co.; Ken Kneen, Pillsbury Mills; and Sam Hunt, Cargill, Inc.

OPENS NEW OFFICE



FRANK A. MILLER

Screw Conveyor Corp., Hammond, Ind., manufacturers of screw conveyor systems, screw conveyor accessories, as well as bucket elevating equipment, announces the recent opening of offices at 333 Candler Bldg., Atlanta, Ga., with Frank A. Miller in charge as Southeastern district manager.

Miller has been identified in the elevating and conveying field for the past 36 years, 11 of which have been spent with Screw Conveyor Corp. in various capacities from plant superintendent to sales engineer. The territory he will serve from Atlanta will include the state of Georgia, as well as Florida, Alabama, Mississippi, Louisiana, Arkansas and the extreme south of Illinois.

—s b d—

ELEVATOR MEN TO MEET

The 23rd annual meeting of the Society of Grain Elevator Superintendents will be held Apr. 16-19 at Omaha, Nebr. H. M. Darling, Glidden Co., Indianapolis, is president of the Association.

Apr. 17 will be devoted to panel discussions, including one on soybeans and flax.

The Society is expected to announce a change of name at the close of the convention, according to Robert R. Bredt, Fruen Milling Co., Min-

What goes into BAGPAK® service to make it so dependable?

Pulp wood from I.P.'s own woodlands, converted into kraft at I.P.'s own paper mills, and made into bags in I.P.'s own bag plants. Practically everything that goes into the manufacture of a Bagpak bag is furnished by the facilities of International Paper.

"you can bank on Bagpak!"

Bagpak has been manufacturing multiwall paper bags since 1928 — makes all kinds of multiwalls, in basis weights to meet any strength required, in a complete size range, without printing or with "non-smear" printing up to four colors.

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Five different I.P. Mills supply bag kraft — not only Natural but also Colored Kraft Paper, as well as Polyethylene Liners, Asphalt Laminated Kraft and Wet Strength Paper. Each bag mill is located on two or more different railroads. Two traffic departments assure prompt delivery.

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for heavy duty multiwall bags: — bags, bag closing materials, car liner, palletized shipments when required, packaging machines and scales — all from one source of supply! Staffs of experts help you with bag designs and packaging problems.

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All these go into the business of providing you with a dependable supply of multiwall paper bags. For the answer to any particular multiwall bag problem, write to:

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◆ Bemis Bro. Bag Co. has established a new research and development department to coordinate and extend its present activities in package design and engineering. H. V. Kindseth, who has been with Bemis since 1931, will direct the department, which is located in Minneapolis, Minn.

◆ Appointments of directors of nationwide purchasing for feed grains and feed ingredients for Pillsbury Mills, Inc., have been announced. Both men will headquarter in Clinton, Iowa. They are Don Long of Los Angeles, who will be responsible for feed grain procurement, and L. J. Halbach of Clinton, who will handle feed ingredient buying.

◆ *Pillsbury Mills, Inc., celebrated 10 years in the feed business Mar. 21, which was the anniversary of its purchase of Champion Milling & Grain Co. The feed and soybean division now accounts for a quarter of the company's volume.*

◆ A new booklet, "Down the River," reveals in graphic form the devastating losses being suffered by the nation as a result of erosion and waste of our national resources. Copies for distribution at 10 cents per copy may be obtained from Soil Conservation Society of America, Paramount Building, Des Moines, Iowa.

◆ The Gibson City, Ill., Fair Association has decided to call its 1952 activity the Soybean Festival and to hold it some time in July, the Association announces. A livestock show will be held in conjunction with the festival.

◆ The Belzoni Oil Works, Belzoni, Miss., is rebuilding part of the soybean mill that was destroyed last November. It is installing a 125-ton-capacity solvent extraction unit. The work is being done under the supervision of N. Hunt Moore, consulting engineer of Memphis, Tenn. H. H. Gantz is manager. Jack Berry is superintendent.

neapolis, first vice president. Last year the group voted to change the name of the organization to Grain Elevator and Processing Superintendents.

—sbd—

OPEN FULTON OFFICE

Norman E. Elsas, chairman of the board, Fulton Bag & Cotton Mills, Atlanta, Ga., announced the opening of the company's new manufacturing plant at the village of Crystal, Minn.

Fulton's plant at Crystal is one of the most modern textile bag manufacturing operations. The company will make all types of cotton and burlap bags with the newest and most efficient type of machinery.

August Denk, who has been with the Fulton organization since 1916, will manage the Crystal operations, as he has in Minneapolis for over 10 years. Sales manager is Gene DuBois who has been with the company for more than 25 years. Jack C. Baker is superintendent of the Crystal plant.

Other Fulton plants are located at Atlanta, St. Louis, Kansas City, Kans., New Orleans, Dallas, Denver, and Los Angeles.

WASHINGTON DIGEST

By WAYNE DARROW
Washington Correspondent for The Soybean Digest

CEILINGS. There's a strong possibility that soybean oil meal price ceilings won't be changed, either by top Administration order, or by further softening of meal prices.

If bean meal ceilings are raised, the boost will be substantial—but a little short of the rumored $90 a ton level.

In any event, edible oil price ceilings probably will be suspended soon.

There was great stir in official circles the last few days of March over the bean meal ceiling matter. It followed the industry advisory committee meeting, and conferences with congressional leaders.

The entire oil meal price ceiling situation came in for intensive study. Much administrative and congressional opposition to raising ceilings developed. Market analysts thought they detected a softening of meal prices. Officials were inclined to think that bean meal would move freely in the market at ceiling prices by the end of the first week in April.

All this added up to delay in announcing new bean meal price regulations that had been drawn up ready to be put in effect Apr. 1. Cottonseed meal price ceilings would be left unchanged, bean meal raised to clear all legal requirements, and linseed meal ceilings put about $2 under bean meal ceilings.

OPS figures present soybean, meal and oil ceilings will meet all legal requirements if meal gets to moving freely in the market at the present $74 a ton ceiling, Decatur. The criteria for determining legality of ceilings are these:

1—Meal and oil ceilings combined must reflect the legal minimum price ceiling to farmers for their beans—$3.06 a bushel national farm average, about $3.11 a bushel in Illinois and Iowa.

2—Ceilings must comply with legal provisions protecting processors' margins.

3—All oil meal ceilings must be in line with each other, and edible oil ceilings must be in line with each other.

4—All oil meal price ceilings must be realistically in line with corn prices.

Whatever action OPS takes now about bean meal ceilings (upping or leaving alone), it has resolved to review the entire situation frequently hereafter. This point was driven home by the OPS industry advisory committee last month. Whatever is done now is expected to hold until the end of the present marketing season, Sept. 30.

Upping bean meal ceilings may temporarily boost meal and bean prices, but not for long, in the opinion of government market men. They figure bean prices of the last several months have reflected the price of mineralized meal, quoted prices of which declined last month to $80 a ton and less—then recovered.

Market men here think bean prices will stay up the balance of this season. A few think they'll go to ceilings, but most think any upward flurries will fall short of that level.

OUTLOOK. The March intentions-to-plant report sorely disappointed USDA. Officials recognize the need for more bean meal, but they are more concerned with corn. PMA is trying to put on a down-the-road campaign to boost corn acreage even yet, but it's coming too late to have much effect.

A bean crop of about 300 million bushels is indicated—about the size of the 1950 crop. If it materializes, there will be 20 million bushels more beans from the crop than last year, and probably another 10 million bushels available for crushing from reduced exports—a total of 700,000 tons more meal for feeding.

A corn crop of 3200 million bushels is indicated if weather is fair. If this proves to be a good year, a crop of 3400 million bushels or more is easily possible. In that case the total supply would equal that of the fall of 1948, with about the same number of hogs to feed it to as then, but with 5 percent more total livestock.

The intentions-to-plant report reflects farmer worries about labor shortages, low hog and egg prices,

and reluctance to cut down much on grassland farming. Cornbelt farmers indicate they're not going to plant many more beans this year than last, not much more corn (but most of the gains are in the highest yielding areas), and quite a lot more oats.

Four of the Big Six Midwest bean states (Illinois, Iowa, Indiana, Ohio) aim to plant 4.7 percent less beans, 2 percent more corn, and 4 percent more oats. The other two (Missouri, Minnesota) plan on 20 percent more beans. Minnesota indicates a cut in corn acreage, and a sharp increase in oats. Missouri plans moderate increases in corn and oats. Taking the six states together the increases are 1 percent on beans, 1.4 percent on corn, 4.8 percent on oats.

The Big Six bean states of the South (Arkansas, Mississippi, North Carolina, Tennessee, Kentucky, Virginia) indicate an 11.7 percent larger bean acreage.

Of the indicated U. S. bean acreage increase of 550,000 acres, the big Southern states furnish 211,000 acres, the big Midwest states 109,000 acres and Kansas 189,000 acres.

Labor shortages in the South probably will cut cotton acreage from last year, but USDA thinks not much. A cotton crop about as large as last year is likely—larger, if it's a good crop year.

MORE MEAL. Total oil meal production and imports for 1952-53 should be larger than for this year. Supply available for feeding is estimated roughly at 9.5 million tons compared to 8.9 million tons this season.

Meal consuming animal units will be less next year than this—probably 164 million compared to 166.4 million for 1951-52. The big reduction will come in hog numbers, with a further decline in horses and mules. Reductions won't be offset by moderate increases in beef cattle, broilers and turkeys. (These are unofficial USDA estimates.)

Total oil meal supplies probably will permit a feeding rate of 113 pounds per animal unit compared to 107 pounds this year, 105.9 pounds last year, and 100.7 pounds the year before (1949-50).

Government officials are inclined to think the larger meal supply will be absorbed without a proportionate reduction in meal prices in 1952-53.

The following table gives the six-year relationship of corn and soybean meal prices, with 1951-52 estimated, and a corn price projection for 1952-53 based on a 3400 million bushel corn crop. (If the 1951-52 meal price estimate of $74 a ton average proves correct, meal prices from now to Sept. 30 would average $66 a ton.)

Comparative farm corn prices and Decatur Soybean meal prices:

	Nat. Av. Farm Corn Price		Decatur Average	Bulk Meal Price % Above Farm Corn Price
	Per Bushel	Per 100 lbs.	Per 100 lbs.	
1946-47	$1.65	$2.94	$3.61	22%
1947-48	2.12	3.78	4.04	6%
1948-49	1.22	2.18	3.30	51%
1949-50	1.25	2.23	3.21	44%
1950-51	1.53	2.73	3.22	18%
1951-52	1.68 est.	3.00 est.	3.70 est.	23% est.
1952-53	1.55 est.	2.77 est.	?	?

Officials see no signs of increasing exports, and therefore do not anticipate improvement in soybean oil prices. Bean exports fell off to almost zero in January. Refined oil exports were one-sixth of Jan. 1951, but crude oil shipments were 5 percent higher. Foreign officials are gloomy on future exports.

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BOLTED STEEL GRAIN STORAGE TANKS

COLUMBIAN Bolted Steel Grain Storage Tanks have proved in actual service through the years to be **the most economical storage you can buy!** That's why users everywhere invariably specify "COLUMBIAN" when additional storage is needed—or new plants constructed.

COLUMBIAN assures you low-cost storage because of minimum initial investment—economical erection due to bolted sectional construction—minimum overhead and maintenance which increases daily profits. Ideal for storage of wheat, corn, oats, barley, soya beans, flax, cotton seed, peanuts, rice, coffee beans, etc.

After 15 YEARS

GANO GRAIN CORP.

Continues to Specify

COLUMBIAN

The all-steel elevator at Cunningham, Kansas, shown below is one of four most recently erected with COLUMBIAN Bolted Steel Tanks by the Gano Grain Corporation. COLUMBIAN tanks were also used for three other Gano elevators at Lewis, Kinsley and Doolan, Kansas.

The Gano Grain Corporation has used COLUMBIAN tanks for many years at their various locations—and continue to specify COLUMBIAN for dependable, low-cost storage.

Easy Ways to Erect

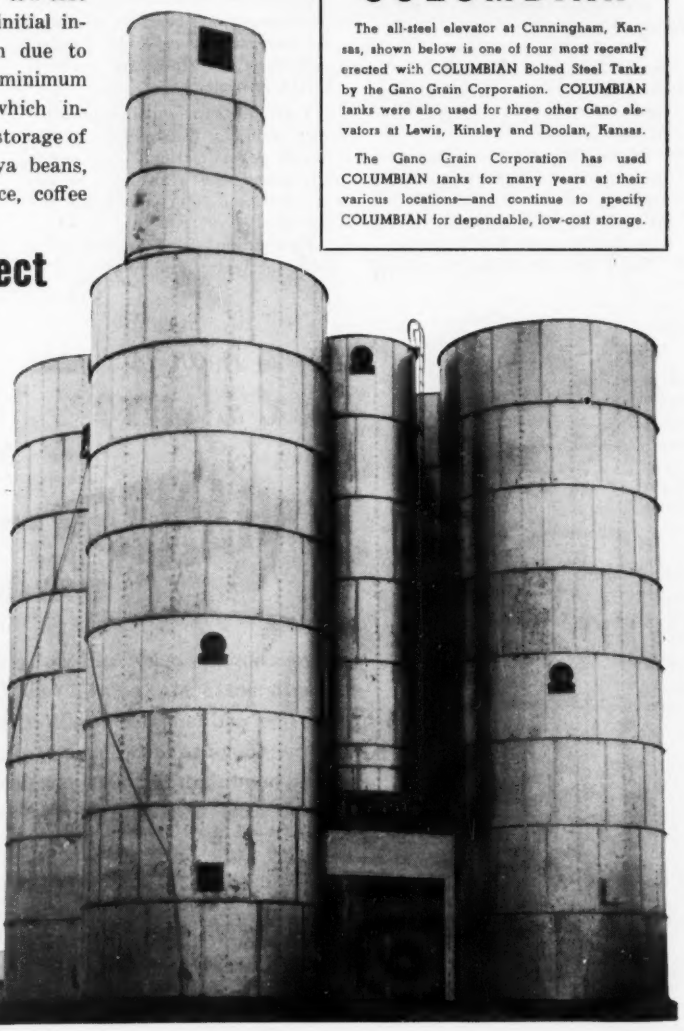
Detailed, easy-to-understand blue prints for erection are furnished so that tanks may be put up with any kind of labor—or we will provide supervisor for your own men—or a complete Columbian erection crew. Foundation specifications and blue prints are furnished to enable your local concrete contractor to build foundation.

FREE Engineering Service

All preliminary engineering service for designing tanks to meet your particular need and arrangement is provided free.

WRITE NOW

for free literature giving complete details.



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P. O. BOX 4048-U
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Associate Member of the Grain and Feed Dealers National Association.

--- MARKET STREET ---

We invite the readers of THE SOYBEAN DIGEST to use "MARKET STREET" for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here. Rate: 10c per word per issue. Minimum insertion $2.00.

GRAIN BINS—ALTHOUGH GALVANIZED steel is in short supply, we still have a few galvanized bins available. Agents and dealers wanted. Midwest Steel Products Co., Railway Exchange Building, Kansas City, Mo.

GOOD OPPORTUNITY OPEN FOR MAN with proven ability and experience as general manager, including purchasing, sales, and supervision, for feed mixing and dog food plant located in central New York state. Address reply to Soybean Digest, Box 319-O, Hudson, Iowa.

AVAILABLE APR. 15—FOR SALE OR lease. 25,000 square feet dead storage, approximately 100,000-bushel grain or seed storage wooden bins, concrete floors, sprinkler system, railroad switch, track scale, suitable for feed, seed, soybean processing plant. Address inquiry Box 120, Louisville 1, Ky.

WANTED IMMEDIATELY — USED French expeller unit. 20 tons capacity. Reply Soybean Digest, Box 319-H, Hudson, Iowa.

SEED DIRECTORY

ARKANSAS

Blytheville—Farmers Soybean Corp., Box 692, noncertified Ogden, bin run or cleaned and sacked.

Stuttgart—Jacob Hartz Seed Co., Inc., 2,500 bu. uncertified Volstate, 3,000 bu. uncertified Dortchsey 31, 1,000 bu. uncertified Roanoke, Ogden and Mamloxi.

ILLINOIS

Bloomington—Ed R. Smith, 2009 E. Jackson, 5,000 bu. field certified Adams, 5,000 bu. field certified Hawkeye, 1,000 bu. field certified Lincoln, 1,000 bu. field certified Blackhawk. All bulk or bagged.

Geneseo—C. D. Ford & Sons, Rt. 4, 500 bu. certified Adams, 500 bu. certified Hawkeye.

Maple Park—Chris Johnson, Rt. 1, 500 bu. certified Blackhawk.

Pontiac—Steve Turner Farm Seeds, 1505 N. Aurora St., 2,000 bu. certified Adams, 2,000 bu. certified Hawkeye.

Ursa—Frank W. Lewis, 1,400 bu. certified Lincoln, 3,000 bu. uncertified Lincoln, 1,800 bu. certified Hawkeye.

Woodstock—Pell-Bari Farms, Inc., 305 Clay St., certified Blackhawk, certified and uncertified Hawkeye.

IOWA

Estherville—A. B. Rosenberger, 500 bu. certified Blackhawk.

Grinnell—W. C. Molison, Rt. 3, 700 bu. field certified Adams.

Grinnell—Carl Tokle, Rt. 4, 250 bu. certified Adams.

Hudson—Strayer Seed Farms, 800 bu. certified Adams, 300 bu. uncertified Bansei.

Nevada—Thomas E. Wilson Farm, Box 53, 900 bu. certified Hawkeye.

KANSAS

Carbondale—Lowell Chamberlain, 300 bu. certified Wabash.

MINNESOTA

Bird Island—Anthony Ziller, 600 bu. registered Blackhawk, 2,000 bu. uncertified, certified and registered Capital.

Morton—Harold Buscho, 200 bu. Minnesota registered Blackhawk.

Sleepy Eye—Arthur V. Domeier, Rt. 1, 100 bu. registered Blackhawk.

MISSISSIPPI

Hollywood—Bard Selden, 3,000 bu. Ogden, low moisture, high germination, artificially dried, stored in metal bins.

MISSOURI

Bragg City—Jeff Wade, Jr., Rt. 1, 1,600 bu. certified Ogden.

Laddonia—Carver Brown, Rt. 1, 600 bu. certified Wabash.

St. Charles—H. V. Seeburger, Rt. 1, 400 bu. uncertified S-100, 200 bu. uncertified Wabash, in paper bushel bags.

St. Louis 2—Cypress Land Farms Co., 314 Merchants Exch. Bldg., 1,000 bu. certified Adams, 2,500 bu. certified Hawkeye, 800 bu. uncertified Rickard Korean, 900 bu. Cypress No. 1, 500 bu. certified S-100, 2,000 bu. uncertified Ogden.

NORTH CAROLINA

Selma—Gurley Milling Co., 1,000 bu. uncertified Roanoke, 2,000 bu. uncertified Wood's Yellow, 500 bu. uncertified Ogden.

OHIO

Ashtabula—Clark Mann & Son, Rt. 2, 1,000 bu. certified Monroe.

Greenwich—W. W. Briggs, Rt. 2, 500 bu. certified Monroe.

TENNESSEE

Newbern—C. Hays Hollar, Box 127, 500 bu. certified Wabash, 300 bu. Wabash grown from certified seed, 300 bu. certified Ogden, 1,200 bu. Ogden grown from certified seed.

NEW MEMPHIS FIRM

The Southland Engineering and Supply Co., Memphis, Tenn., has been organized for the designing and sales of grain drying and storage plants and equipment. They began operations on March 1st.

Officials are Robert M. Underwood, president, former sales and engineering representative with Lewis Supply Co., Memphis; W. B. Regenold, Jr., vice president, formerly with Lewis-Diesel Engine Co., Memphis; John Costen, attorney, secretary-treasurer; and William L. Hays, formerly in the engineering department, Lewis Supply Co.

The firm will also specialize in the handling of mechanical power transmission and irrigation equipment.

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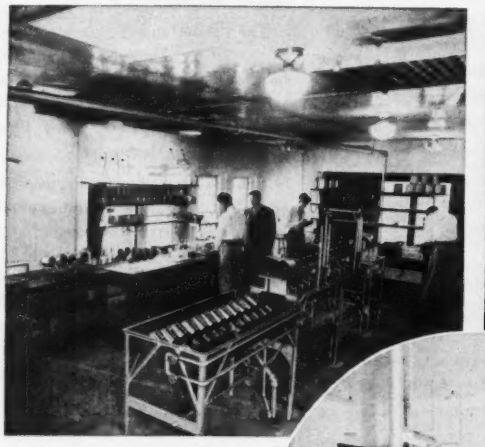
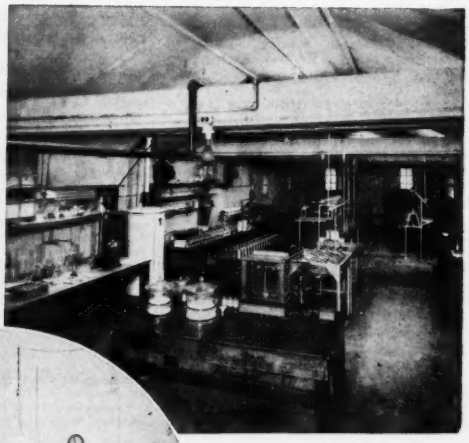
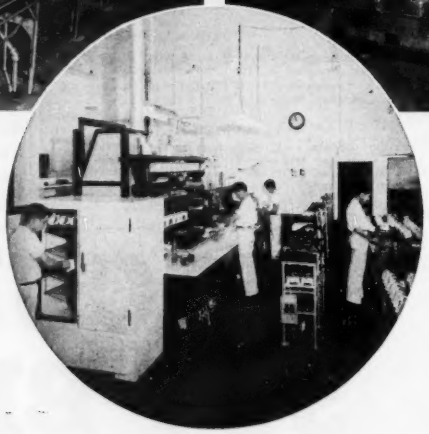


The Decatur, Ill., laboratory is equipped with the most modern equipment for refining soybean oils.



The Des Moines, Iowa, laboratory with all the latest equipment for refining oils.



The Oil Refining Department at the Memphis, Tenn., laboratory with a capacity of 150 refinings daily.

7

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"Over ONE BILLION dollars worth of products analyzed since 1935."

IN THE MARKETS

Soybean Oil at Two-Year Low

Markets continued to mark time in March with little change in the price level. They were affected by the continuing unfavorable processing conversion ratio, and at times by the hope that the government would raise the ceiling on soybean oil meal. The latter action did not happen but expectation of it strengthened markets during midmonth and caused a flurry the last week.

Also having their effect were the Senate banking committee's vote to lift the embargo on imports of fats and oils, and the U. S. Department of Agriculture report indicating a record soybean acreage may be planted.

Soybean oil dipped to the lowest price in over two years the last of the month. There was considerable trading in soybean oil at times, up to 200 tankcars in a day.

Soybean oil meal stayed at the nominal $74 ceiling all month, though none was available at that figure. At times some futures sold below ceiling. The easiness in meal markets was due to reduced demand for soybean oil meal mixtures which were in ample supply, improved pasture conditions and the continued weakness in oil.

There was only a limited processor demand for cash beans which were still stored in the country in considerable volume.

March No. 2 soybeans, Chicago, opened at $2.98, the low, and closed at $3. High was $3.04½ Mar. 17. May soybeans opened at $2.89, the low, and closed at $2.96½. High was $3.01½ Mar. 17.

Crude soybean oil in tankcars opened at 10¼c and closed at 9¾c, the low. High was 10½c, which held during the middle of the month.

MEMPHIS SOYBEAN OIL MEAL FUTURES MAR. 31*

Soybean Meal bulk—Decatur (Contract 100 tons) May 74.00b; July 74.00b; Aug. 74.00b; Oct. 74.00b; Dec. flat 73.50; Jan. 73.00@73.50.

CHICAGO SOYBEAN OIL MEAL FUTURES CLOSE MAR. 31*

May 74.00b; July 74.00b; Sept. 74.00b; Dec. 72.75b-73.25a.

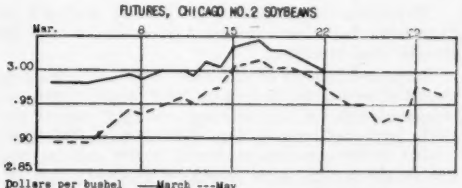
CHICAGO SOYBEAN OIL FUTURES CLOSE MAR. 31*

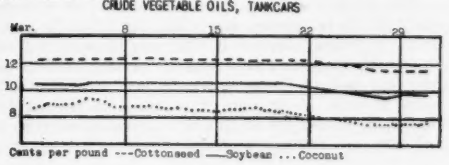
Soybean Oil (per pound) May 9.77b-9.80a; June 9.85n; July 9.94b-9.98a; Sept. 10.11b-10.13a; Oct. 10.20b-10.24a; Nov. 10.30b-10.34a; Dec. 10.35b-10.40a.

NEW YORK SOYBEAN OIL FUTURES CLOSE MAR. 31*

May 9.95b; July 9.98-97; Sept. 10.00b; Dec. 10.20.

a-asked. b-bid. *Reported by Chicago edition of Wall Street Journal.





FUTURES TRADING AND OPEN CONTRACTS IN SOYBEAN OIL MEAL ON MEMPHIS MERCHANTS EXCHANGE CLEARING ASSOCIATION (IN TONS)

	Volume of trading	Open Contracts		Volume of trading	Open Contracts
Feb. 23	1,500	127,300	Mar. 14	400	123,800
Feb. 25	2,100	128,000	Mar. 15		123,800
Feb. 26	6,300	127,600	Mar. 17		123,800
Feb. 28	7,700	128,600	Mar. 18		123,800
Feb. 29	9,200	124,800	Mar. 19		123,800
Mar. 1	1,000	125,200	Mar. 20	5,700	120,600
Mar. 3	1,000	125,700	Mar. 21		120,600
Mar. 4	100	125,700	Mar. 22		120,600
Mar. 7	9,200	125,300	Mar. 24	500	112,700
Mar. 8		123,400	Mar. 25	400	113,100
Mar. 10	1,400	123,400	Mar. 26	4,100	113,100
Mar. 11	1,000	123,800	Mar. 27	4,900	114,200
Mar. 12	800	123,900	Total for 26 days reported	56,400	
Mar. 13		123,800			

● **FACTORY USE SOYBEAN OIL.** Factory production of crude soybean oil totaled 234,247,000 lbs. in January compared with 221,400,000 lbs. in December, reports Bureau of the Census. Factory production of the refined oil was 179,073,000 lbs. in January, 149,822,000 lbs. in December.

Factory consumption of crude soybean oil in January was 191,820,000 lbs.; 161,746,000 lbs. in December. Consumption of the refined soybean oil in January was 159,187,000; in December 134,518,000 lbs.

Factory and warehouse stocks of crude soybean oil totaled 230,807,000 lbs. Jan. 31; 197,346,000 lbs. Dec. 31. Stocks of the refined oil totaled 97,092,000 lbs. Jan. 31; 83,920,000 lbs. Dec. 31.

Usage of crude soybean oil in January: soap 87,000 lbs.; paint and varnish 592,000 lbs.; lubricants and greases 38,000 lbs.; other inedible products 1,594,000 lbs.

Usage of refined soybean oil in January: shortening 46,099,000 lbs.; margarine 8,531,000 lbs.; other edible products 6,137,000 lbs.; soap 55,000 lbs.; paint and varnish 5,247,000 lbs.; lubricants and greases 9,000 lbs.; linoleum and oilcloth 1,577,000 lbs.; other inedible products 7,474,000 lbs.

Usage of hydrogenated edible soybean oil in January: shortening 17,006,000 lbs.; margarine 47,886,000 lbs.; other edible products 517,000 lbs.

● **INSPECTIONS.** Inspected receipts of soybeans in January while somewhat above December were only a little over half those of a year earlier, reports U. S. Department of Agriculture. January inspected receipts totaled 7,878 cars compared with 7,385 in December and 14,129 cars in Jan. 1951.

The quality of the soybeans inspected in January improved over the preceding month but was below the same month for the preceding eight years. Only 66 percent graded No. 2 or better compared with 59 percent in December and 79 percent the 8-year January average.

Inspections of soybeans in January included the equivalent of 714 cars inspected as cargo lots and 226 cars as truck receipts.

Inspected receipts of soybeans in February were the largest of record for that month and totaled 9,200 cars, compared with 7,878 in January and 7,262 cars in Feb. 1951. Inspected receipts, Oct. 1951 through Feb. 1952, totaled 78,806 cars compared with 91,890 cars last year and 70,454 cars the same months of 1949-50.

The quality of the soybeans inspected in February was well above average but somewhat below last year. Of the soybeans inspected in February 71 percent graded No. 2 or better compared with 83 percent in February last year and 64 percent the 10-year (1941-50) February average. Inspections of soybeans in February included the equivalent of 460 cars inspected as cargo lots and 209 cars as truck receipts.

● PROCESSING OPERATIONS. Reported by Bureau of Census, Department of Commerce, for December, January.

PRIMARY PRODUCTS EXCEPT CRUDE OIL, AT CRUDE OIL MILL LOCATIONS: PRODUCTION, SHIPMENTS AND TRANSFERS AND STOCKS, JANUARY 1952—DECEMBER 1951

Products	Production		Shipments and transfers		End of month stocks	
	Jan. 1952	Dec. 1951	Jan. 1952	Dec. 1951	Jan. 31, 1952	Dec. 31, 1951
SOYBEAN:						
Cake & meal†	563,451	541,418	564,815	537,825	32,684	34,048
Lecithin‡	1,641,580	1,731,862	1,615,940	1,361,212	2,870,844	2,845,204
Edible soy flour, full fat†	551	(*)	536	(*)	275	260
Edible soy flour, other†	6,172	4,439	6,012	4,175	1,501	1,341
Industrial soy flour†	1,349	(*)	1,376	(*)	928	955

* Not shown to avoid disclosure of individual operations.
† Unit of measure in tons. ‡ Unit of measure in pounds.

SOYBEANS: RECEIPTS, CRUSHINGS AND STOCKS AT OIL MILLS BY STATES, JANUARY 1952—DECEMBER 1951
(Tons of 2,000 pounds)

State	Receipts at mills		Crushed or used		Stocks at mills	
	Jan. 1952	Dec. 1951	Jan. 1952	Dec. 1951	Jan. 31, 1952	Dec. 31, 1951
U. S.	405,092	*509,230	721,018	*695,360	1,539,512	*1,855,438
Arkansas	2,734	14,043	29,153	17,458	91,756	118,175
Illinois	160,073	175,239	275,983	287,777	509,059	624,969
Indiana	28,353	33,335	58,196	60,764	81,932	111,775
Iowa	60,066	* 67,788	117,503	*110,291	152,544	* 209,981
Kansas	12,321	16,616	16,532	20,534	29,099	33,360
Kentucky	10,785	9,598	19,421	17,783	52,217	60,853
Minnesota	19,896	16,391	27,980	32,185	22,128	30,212
Mississippi(1)	(2)	(2)	9,291	(2)	31,783	(2)
Missouri	13,937	16,829	23,421	20,997	115,494	124,978
Nebraska	1,232	3,947	5,219	5,315	22,393	26,380
N. Carolina	5,783	25,294	8,136	3,884	51,131	53,484
Ohio	54,236	* 65,184	75,781	64,946	200,186	* 221,731
Oklahoma	2,697	5,466	5,545	2,755	7,249	10,097
Texas		(2)	(2)	(2)	(2)	(2)
All other	32,979	* 59,500	48,807	50,771	172,541	* 229,443

* Revised.
(1) Mississippi is shown separately for first time; has previously been included in "All other."
(2) Included in "All other" to avoid disclosure of individual operations.

SOYBEAN PRODUCTS: PRODUCTION AND STOCKS AT OIL MILL LOCATIONS, BY STATES, JANUARY 1952—DECEMBER 1951

State	Crude oil (thousand pounds)				Cake and meal (tons)			
	Production		Stocks		Production		Stocks	
	Jan. 1952	Dec. 1951	Jan. 31, 1952	Dec. 31, 1951	Jan. 1952	Dec. 1951	Jan. 31, 1952	Dec. 31, 1951
U. S.	234,247	221,400	113,568	*96,525	563,451	541,418	32,684	34,048
Arkansas	8,216	5,200	3,448	2,794	22,239	13,630	1,802	1,497
Illinois	94,687	94,400	46,111	36,022	209,383	218,393	9,445	13,637
Indiana	20,006	20,553	6,991	7,392	46,707	47,615	4,270	3,164
Iowa	36,012	33,147	20,950	*15,569	94,272	87,715	2,926	3,295
Kansas	5,224	6,353	4,021	3,672	13,490	16,486	(1)	1,018
Kentucky	6,883	6,350	844	955	15,116	13,638	715	752
Minnesota	7,896	9,291	4,742	5,175	22,139	25,581	1,123	1,112
Miss.(2)	2,806	(1)	1,741	(1)	7,401	(1)	999	(1)
Missouri	6,785	6,216	1,767	2,740	18,328	17,021	1,021	926
Nebraska	1,514	1,528	755	950	4,447	4,423	(1)	(1)
N. Car.	2,234	1,065	1,569	1,327	6,412	3,082	929	446
Ohio	25,461	21,198	8,954	7,349	59,706	50,915	3,028	3,038
Oklahoma	1,669	787	512	426	4,662	2,321	536	253
Texas	(1)	(1)	(1)	(1)	(1)	(1)	291	(1)
All other	14,854	15,312	11,163	12,154	39,099	40,648	5,599	5,010

* Revised.
(1) Included in "All other" to avoid disclosure of individual operations.
(2) Mississippi is shown separately for first time; has previously been included in "All other."
Prepared by Bureau of the Census, Industry Division, Chemicals Section.

● SOYBEAN GLUE.

Consumption of soybean glue by the softwood plywood industry in January totaled 4,450,000 lbs., dry basis, compared with 3,354,000 lbs. in December.

Consumption of phenolic resin glue in January was 2,235,000 lbs. Total consumption of all glues was 7,503,000 lbs. in January.

Stocks of soybean glue totaled 2,905,000 lbs. Jan. 31 compared with 3,369,000 lbs. Dec. 31.

● **STOCKS.** Production and Marketing Administration's commercial grain stock reports.

U. S. Soybeans in Store and Afloat at Domestic Markets (1,000 bu.)

	Mar. 3	Mar. 10	Mar. 17	Mar. 24
Atlantic Coast	703	698	703	799
Gulf Coast	212	131	239	36
Northwestern and Upper Lake	298	298	278	270
Lower Lake	1,351	1,476	1,514	1,552
East Central	1,741	1,656	1,468	1,449
West Central Southwestern & Western	1,167	1,143	1,071	945
Total current week	5,472	5,402	5,273	5,051
Total Year ago	13,244	12,769	13,124	12,917

U. S. Bonded Soybeans in Store and Afloat at Canadian Markets

Total current week	69	69	69	69
Total Year ago	96	96	96	96

Total North American Soybean Stocks

Current week	5,541	5,471	5,342	5,120
Year ago	13,340	12,865	13,220	13,013

● **EXPORTS.** U. S. exports of soybeans and soybean oil for January, as reported by the Office of Foreign Agricultural Relations:

Soybeans	18,923 bu.
Soybean oil (crude)	16,622,395 lbs.
Soybean oil (refined but not further processed)	232,043 lbs.
Soybean oil (refined, deodorized and hydrogenated)	906,845 lbs.

Converted to a soybean equivalent basis, the exports for January amounted to 1,841,992 bushels of beans.

The grain inspection department of the New Orleans Board of Trade reports that 442,000 bushels of soybeans were cleared for export shipment from the Port of New Orleans during the month of February, compared with 1,708,000 during Feb. 1951. A total of 18,270,000 bushels have been cleared for shipment since July 1, 1951.

February shipments included 350,000 bushels for Japan, and 91,000 bushels for Norway.

● **WAREHOUSE LOANS.** The U. S. Department of Agriculture announced that if the market value of a specified list of farm commodities under Commodity Credit Corp. warehouse loan is in excess of the loan value plus interest and charges, at the time the warehouse receipts are taken over by CCC, the amount of the difference—or farmers' equity—will be paid to the producers of the commodities.

Maturity date and final date for repayment on 1951-crop soybeans is May 31.

Warehouse receipts for these commodities under warehouse loans remaining unredeemed on the above dates will be taken over by CCC on those dates. If the market value as of the close of the market on the final date for repayment is in excess of the loan value, plus interest and charges, the excess will be paid by CCC, but only producers are eligible to receive this payment.

Producers who have warehouse storage loans may pay their notes before the maturity dates if they choose. They are urged to do so in those instances where current prices are above the loan price plus carrying charges.

Department officials pointed out that the announcement applies only to warehouse loans and does not modify in any way the operations of the price support program for farm-stored commodities or those supported by purchase agreements.

● **SHORTENING.** Standard shortening shipments reported by the Institute of Shortening and Edible Oils, Inc., in pounds.

Jan. 26	4,519,564	Mar. 1	4,712,179
Feb. 2	4,535,354	Mar. 8	5,230,622
Feb. 9	4,518,016	Mar. 15	4,902,820
Feb. 16	4,989,693	Mar. 22	4,736,917
Feb. 23	4,074,455		

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